

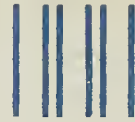
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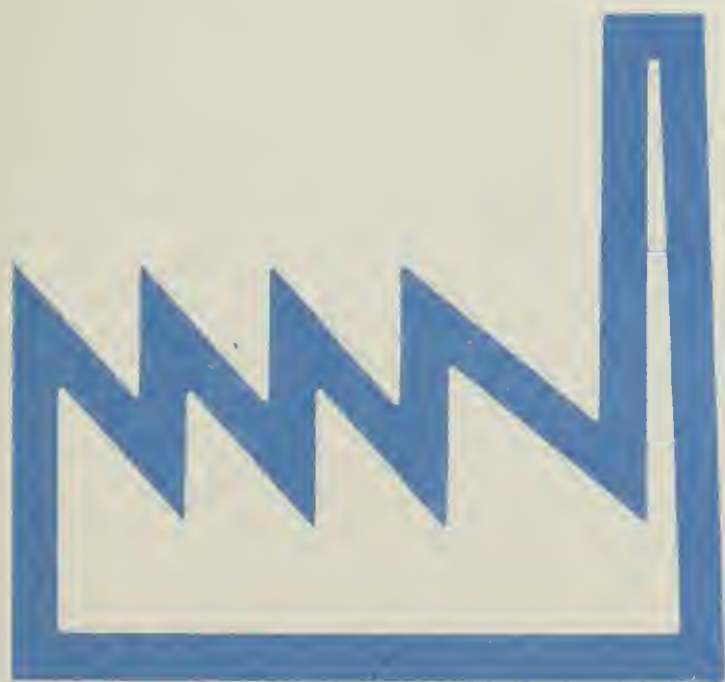
Census of Manufactures

MC82-1-36C

INDUSTRY SERIES

Electric Lighting and Wiring Equipment

Industries 3641, 3643, 3644, 3645, 3646, 3647, and 3648



The publications
from the 1982 Economic and
Agriculture Censuses are dedicated
to the memory of Shirley Kallek,
Associate Director for Economic Fields.
During her career at the Bureau of the
Census (1955 to 1983), she continually
directed efforts to improve
the timeliness and accuracy of
economic statistics.

1982

Census of Manufactures

MC82-I-36C

INDUSTRY SERIES

Electric Lighting and Wiring Equipment

3641	Electric Lamps
3643	Current-Carrying Wiring Devices
3644	Noncurrent-Carrying Wiring Devices
3645	Residential Lighting Fixtures
3646	Commercial Lighting Fixtures
3647	Vehicular Lighting Equipment
3648	Lighting Equipment, N.E.C.

Issued March 1985



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INDUSTRY DIVISION
Gaylord E. Worden, Chief

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INTRODUCTION

ECONOMIC CENSUSES OVER TIME

The early beginnings of America's industrial output were first measured in the United States in the 1810 Decennial Census and again in 1820, when questions on manufacturing were included with those for population. Beginning with the 1840 Decennial Census, there were enumerations of manufactures and mineral industries at 10-year intervals up to and including the year 1900 for manufactures and 1940 for mineral industries. The latter census was again taken for 1954, 1958, 1963, and 1967.

Because of the increasing dominance of manufacturing in the early 20th century, Congress directed that quinquennial censuses of manufactures be taken beginning in 1905. However, from 1919 through 1939, these censuses were conducted every 2 years. The need for war-related current surveys in the early 1940's postponed the next census of manufactures until 1948 (for 1947). That census was again taken for 1954, 1958, 1963, and 1967.

Retail and wholesale trade data were first collected in 1930, and in 1933 information on selected service industries was added to the data-collection operation. These business censuses, as they were called, were again taken for 1935, 1939 (as part of the 1940 decennial program), 1948, 1954, 1958, 1963, and 1967.

Information on construction industries was obtained first in 1930 and again for 1935 and 1939. Data for the full spectrum of construction industries were not gathered again until 1968 (for 1967).

The need for transportation data to supplement information available from existing governmental or private sources was recognized by Congress in the late 1950's and early 1960's. The census of transportation (consisting of several surveys) was taken first for 1963 and again for 1967.

Since 1967, all of the above censuses have been taken quinquennially as part of the Census Bureau's economic census program. (For the 1977 censuses, the coverage of the service industries was broadened from "selected services" to "all services, except religious organizations and private households." A total of 41 additional four-digit standard industrial classifications¹ (SIC's) in 7 SIC major groups was added to the scope of the census. While most of the industries included for the first time for 1977 were covered again for 1982, some were not, i.e., hospitals; elementary and secondary schools; colleges, universities, and professional schools; junior colleges and technical institutes; labor unions and similar labor organizations; and political organizations.)

The first manufacturing census for an outlying area was conducted in Puerto Rico for the year 1909. Thereafter, with the exception of 1929, a census was taken at 10-year intervals through 1949. The first censuses of retail trade, wholesale trade, and selected service industries in Puerto Rico were conducted for 1939. These censuses also were taken for the years 1949, 1954, 1958, 1963, and 1967. A census of construction industries was introduced first in Puerto Rico for 1967. These censuses of Puerto Rico have been taken since then for the years 1972, 1977, and 1982.

Censuses of manufactures, retail trade, wholesale trade, and selected service industries were conducted in Guam and the

Virgin Islands of the United States for 1958, 1963, 1967, 1972, 1977, and 1982. Censuses of mineral industries were taken in the Virgin Islands of the United States for the years 1958, 1963, and 1967 but not since that time. A census of construction industries was also undertaken in these areas for 1972, 1977, and 1982.

Retail trade, wholesale trade, selected service industries, manufacturing, and construction industries were canvassed for the first time in the Northern Mariana Islands in 1983 (for 1982).

For 1982, the economic censuses and agriculture censuses were conducted concurrently.

USES OF THE ECONOMIC CENSUSES

The economic censuses are the major source for facts about the structure and functioning of the Nation's economy and provide essential information for government, business, industry, and the general public. They provide an important part of the framework for such composite measures as the gross national product, input-output measures, indexes of industrial production, and indexes measuring productivity and price levels. Information from the censuses is used to establish sampling frames and as benchmarks for current surveys of business activity, which are essential for measuring short-term economic conditions.

State and local governments use census data to assess business activities within their jurisdictions. The private sector uses the data to forecast general economic conditions; analyze sales performance; lay out sales territories; allocate funds for advertising; decide on locations for new plants, warehouses, or stores; and measure potential markets in terms of size, geographic areas, kinds of business, and kinds of products made or sold.

Following every census, thousands of businesses and other users purchase reports. Likewise, census facts are disseminated widely by trade associations, business journals, and newspapers. Volumes containing census statistics are available in most major public and college libraries. All 1982 data are available on microfiche from the U.S. Government Printing Office and most data on computer tape from the Census Bureau. Finally, the more than 50 State Data Centers also are suppliers of economic census statistics.

AUTHORITY AND SCOPE OF THE ECONOMIC CENSUSES

The economic censuses are required by law under title 13 of the United States Code, sections 131, 191, and 224, which directs that they be taken at 5-year intervals for the years ending in 2 and 7. The 1982 Economic Censuses covered manufacturing, mining, construction industries, retail trade, wholesale trade, service industries, and selected transportation activities. Special programs also cover minority-owned and women-owned businesses. The next economic censuses are scheduled to be taken in 1988 for the year 1987.

¹Standard Industrial Classification Manual: 1972. For sale by Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Stock No. 041-001-00066-6. 1977 Supplement. Stock No. 003-00500176-0.

CENSUS OF MANUFACTURES

General

The 1982 Census of Manufactures is the 31st census of manufactures of the United States. For 1982, it was conducted jointly with the censuses of mineral industries, construction industries, retail and wholesale trades, service industries, selected transportation activities, and minority-owned and women-owned businesses.

This report, from the 1982 Census of Manufactures, is one of a series of 82 industry reports, each of which provides statistics for groups of related industries. Additional separate reports will be issued for each State and on special subjects, such as size of establishments, legal form of organization, and fuels and electric energy consumed.

These separate reports will subsequently be issued as portions of the final census volumes. Volume I, Subject Statistics, will show comparative statistics for industries, States, and standard metropolitan statistical areas. It also will show selected subjects, such as concentration ratios in manufacturing, selected materials consumed, manufacturing activity in government establishments, and water use in manufacturing. Volume II, Industry Statistics, will be a consolidation of reports for the 82 groups of industries showing the same information that is shown in this report. Volume III, Geographic Area Statistics, will contain establishment-based data (number of establishments, employment, payroll, value added by manufacture, and capital expenditures) for each State and its important standard metropolitan statistical areas, counties, and places, by industry groups and important individual industries. Totals for "all manufacturing" will be shown for counties and places with more than 450 manufacturing employees. The introduction to the final volumes will discuss, at greater length, many of the subjects described in this introduction. For example, the volume text will discuss the relationship of value added by manufacture to National income by industry of origin, the changes in statistical concepts over the history of the censuses, and the valuation problems arising from intracompany transfers between manufacturing plants of a company and between manufacturing plants and sales offices and sales branches of a company.

Scope of Census and Definition of Manufacturing Industries

The 1982 Census of Manufactures covers all establishments employing one person or more primarily engaged in manufacturing as defined in the 1972 Standard Industrial Classification (SIC) Manual and its 1977 Supplement.¹ This is the system of industrial classification developed over a period of years by experts on classification in government and private industry under the guidance of the Office of Management and Budget. This system of classification is in general use among government agencies as well as organizations outside the government.

The SIC manual defines manufacturing as the mechanical or chemical transformation of inorganic or organic substances into new products. The assembly of component parts of products is also considered to be manufacturing if the resulting product is neither a structure nor other fixed improvement. These activities are usually carried on in plants, factories, or mills that characteristically use power-driven machines and materials handling equipment.

¹Standard Industrial Classification Manual: 1972. For sale by Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Stock No. 041-001-00066-6. 1977 Supplement. Stock No. 003-00500176-0.

Manufacturing production is usually carried on for the wholesale market, for transfers to other plants of the same company, or to the order of industrial users rather than for direct sale to the household consumer. Some manufacturers in a few industries sell chiefly at retail to household consumers through the mail, through house-to-house routes, or through salespersons. Some activities of a service nature (enameling, engraving, etc.) are included in manufacturing when they are performed primarily for the trade. They are considered nonmanufacturing when they are performed primarily to the order of the household consumer.

Relationship Between Annual Survey of Manufactures and Census of Manufactures

The Bureau of the Census conducts the annual survey of manufactures (ASM) in each of the 4 years between the censuses of manufactures. The ASM is based on a scientifically selected sample of approximately 55,000 establishments and collects the same industry statistics (employment, payroll, value of shipments, etc.) as the census of manufactures. In addition to collecting the information normally requested on the census form, the establishments in the ASM sample are requested to supply detailed information on assets, capital expenditures, retirements, depreciation, rental payments, supplemental labor costs, and costs of purchased services.

Establishment Basis of Reporting

The census of manufactures and the annual survey of manufactures are conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1982, as in earlier years, a minimum size limit was set for including establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

This report excludes information for separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company (see Auxiliaries).

Manufacturing Universe and Census Report Forms

The 1982 Census of Manufactures universe includes approximately 345,000 establishments. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures. The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in this publication are described below.

1. Small Single-Unit Companies Not Sent a Report Form

In the 1982 Census of Manufactures, approximately 140,000 small single-establishment companies were excused from filing reports. Selection of these small

establishments was done on an industry-by-industry basis and was based on annual payroll and total shipments data as well as on the industry classification codes contained in the administrative records of other Federal agencies. The cutoffs were selected so that these administrative records cases would account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed report forms.

Information on the physical location of the establishment, as well as information on payrolls, receipts (shipments), and industry classification, was obtained from the administrative records of other Federal agencies under special arrangements, which safeguarded their confidentiality. Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these establishments but were included in the product and material "not specified by kind" (n.s.k.) categories.

The industry classification codes included in the administrative records files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to the four-digit SIC level. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes these administrative record cases were given only a two- or three-digit SIC group. For the 1982 Census of Manufactures, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the four-digit SIC level. Establishments that did not return the classification form were coded later to those four-digit SIC industries identified as "not elsewhere classified" (n.e.c.) within the given two- or three-digit industry groups.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassifications have no significant effect on the statistics other than on the number of establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments Sent a Report Form

The 205,000 establishments covered in the mail canvass were divided into three groups:

a. ASM sample establishments—This group consisted of approximately 55,000 establishments covering all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size (see appendix, Annual Survey of Manufactures).

In a census of manufactures year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll,

and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply information on assets, capital expenditures, retirements, depreciation, rental payments, supplemental labor costs, and costs of purchased services. Results of the ASM inquiries are included in tables 3c and 3d of this report.

The census part of the report form is one of approximately 200 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the approximately 450 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries, as well as secondary products and miscellaneous services that establishments classified in these industries were likely to be performing. Respondents were requested to identify the products, the value of each product, and, in a large number of cases, the quantity of the product shipped during the survey year. Space was also provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry, which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

Finally, a wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM)—Approximately 100,000 establishments were included in this group. A variable cutoff, based on administrative records payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive one of the approximately 200 census of manufactures regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-unit establishments (non-ASM)—This group consisted of approximately 50,000 establishments. For those industries where application of the variable cutoff for administrative records cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or "short" form was used. These establishments received one of the approximately 80 versions of the short form, which requested summary product and material data and totals but no details on employment, payrolls, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics; the same

data were collected on the short as well as the long form. However, detailed information on materials consumed was not collected on the short form; thus its use would increase the values of the n.s.k. categories.

Auxiliaries

In this industry report, the data on employment and payroll are limited to operating manufacturing establishments. The census report form filed for auxiliaries (ES-9200) requested a description of the activity of the establishments serviced. However, the auxiliaries were coded only to the two-digit major group of the establishments they served; whereas, the operating establishments were coded to a four-digit manufacturing industry. Data for the approximately 10,000 separately operated auxiliaries are included in the paperbound geographic area series, the bound volumes of the census of manufactures, and in a report issued as part of the 1982 Enterprise Statistics survey.

Auxiliaries are establishments whose employees are primarily engaged in performing supporting services for other establishments of the same company, rather than for the general public or for other business firms. They can be at different locations from the establishments served or at the same location as one of those establishments but not operating as an integral part thereof and serving two or more establishments. Where auxiliary operations are conducted at the same location as the manufacturing operation and operate as an integral part thereof, they usually are included in the report for the operating manufacturing establishment.

Included in the broad category of auxiliaries are administrative offices. Employees in administrative offices are concerned with the general management of multiestablishment companies, i.e., with the general supervision and control of two units or more, such as manufacturing plants, mines, sales branches, or stores. The functions of these employees may include (1) program planning, including sales research and coordination of purchasing, production, and distribution; (2) company purchasing, including general contracts and purchasing methods; (3) company financial policy and accounting, tax accounting, company sales and profit reports, and personnel accounting; (4) general engineering, including design of product machinery and equipment, and direction of engineering effort conducted at the individual operation locations; (5) direction of company personnel matters; and (6) legal and patent matters.

Other types of auxiliaries serving the plants or central management of the company include purchasing offices, sales promotion offices, research and development organizations, etc.

Industry Classification of Establishments

Each of the establishments covered in the census was classified in one of approximately 450 manufacturing industries in accordance with the industry definitions in the SIC system. Under this system of classification, an industry is generally defined as a group of establishments producing a single product or a closely related group of products. The product groupings from which industry classifications are derived are based on considerations such as similarity of manufacturing processes, types of materials used, types of customers, and the like. The resulting group of plants must be significant in terms of its number, value added by manufacture, value of shipments, and number of employees. The system operates in such a way that the definitions progressively became narrower with successive additions of numerical digits. There are 20 major groups (two-digit SIC), 143 industry groups (three-digit SIC), and approximately 450

industries (four-digit SIC). The product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. There are about 1,500 classes of products, identified by a five-digit code, and about 11,000 products, identified by a seven-digit code. The seven-digit products are considered the primary products of the industry with the same four digits.

Accordingly, an establishment is usually classified in a particular industry on the basis of its major activity during a particular year, i.e., production of the products primary to that industry exceeds, in value, production of the products primary to any other single industry. In a few instances, however, the industry classification of an establishment is not only determined by the products it makes but also by the process employed in making those products. For example, establishments engaged in blast furnace operations, refining of nonferrous metals from ore, or rolling and drawing of nonferrous metals (processes which involve heavy capitalization in specialized equipment) would be classified according to the process used during a census year. These establishments then would be "frozen" in that industry during the following ASM years.

In either a census or ASM year, establishments included in the ASM sample with certainty weight, other than those involved with heavily capitalized activities described above, are reclassified by industry only if the change in the primary activity from the prior year is significant or the change has occurred for two successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year (see appendix, Annual Survey of Manufactures). However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The result of these rules covering the switching of plants from one industry classification to another is that, at the aggregate level, some industries comprise different mixes of establishments between survey years, and establishment data for such industry statistics as employment and payroll may be tabulated in different industries between survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the four-digit SIC level, should be viewed with caution. This is true particularly for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of establishments.

While some establishments produce only the primary products of the industry in which they are classified, all establishments of an industry rarely specialize to this extent. The industry statistics (employment, inventories, value added by manufacture, total value of shipments including resales and miscellaneous receipts, etc.) shown in tables 1a through 5a, therefore, reflect not only the primary activities of the establishments in that industry but also their secondary activities. The product statistics in tables 6a through 6c represent the output of all establishments whether or not they are classified in the same industry as the product. For this reason, in relating the industry statistics, especially the value of shipments to the product statistics, the

composition of the industry's output shown in table 5b should be considered.

The extent to which industry and product statistics may be matched with each other is measured by two ratios, which are computed from the figures shown in table 5b. The first of these ratios, called the primary product specialization ratio, measures the proportion of product shipments (both primary and secondary) of the establishments classified in the industry represented by the primary products of those establishments. The second ratio, called the coverage ratio, is the proportion of primary products shipped by the establishments classified in the industry to total shipments of such products by all manufacturing establishments.

However, establishments making products falling into the same industry category may use a variety of processes and materials to produce them. Also, the same industry classification (based on end products) may include both establishments that are highly integrated and those that put only the finishing touches on an already highly fabricated item. For example, the refrigeration industry includes instances of almost complete integration (production of the compressor, condensing unit, electric motor, casting, stamping of the case, and final assembly) all carried on at one plant. On the other hand, the condensing unit, the motor, and the case may be purchased and only assembled into the finished product.

In some instances, separate industry categories have been established for integrated and nonintegrated establishments. For other industries, the census provides separate statistics on the production of intermediate commodities made and used in the producing plant. For some industries characterized by many plants of the same company, separate figures on interplant transfer of products usually are shown.

Differences in the integration of production processes, types of operations, and alternatives in types of materials used should be considered when relating the industry statistics (employment, payrolls, value added, etc.) to the product and material data.

Value of Shipments for the Industry Compared With Value of Product Shipments

This industry report shows value of shipments data for industries and products. In tables 1a through 5a, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Product shipments shown in table 6a represent the total value of shipments of products classified as primary to an industry that were shipped by all manufacturing establishments regardless of their industry classification.

CENSUS DISCLOSURE RULES

In accordance with Federal law governing census reports, no data are published that would disclose the data for an individual establishment or company. However, the number of establishments classified in a specific industry is not considered a disclosure, so this item may be given even though other information is withheld.

The disclosure analysis for the industry statistics in tables 1a through 5a of this report is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line has been suppressed. However, the suppressed data are included in higher level totals. Additional disclosure analysis is performed for new capital expenditures that can be suppressed even though value of shipments data are publishable.

MICROFICHE AND COMPUTER TAPES

All the data in this report are available on microfiche. Selected data are also available on computer tape.

In addition to selected published data being on computer tape, one major data series, the location of manufacturing plants, will be available only on computer tape. This series presents the number of establishments by employment size class by four-digit SIC industry codes for States, counties, and places of 2,500 inhabitants or more. These data are available for both State and county by industry, and State and place by industry.

Microfiche reports are sold by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Computer tapes are sold by the Data User Services Division, Customer Services (Tapes), Bureau of the Census, Washington, D.C. 20233.

SPECIAL TABULATIONS

Special tabulations of data collected in the 1982 Census of Manufactures may be obtained on computer tape or in tabular form. The data will be in summary form and subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) as are the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief, Industry Division, Bureau of the Census, Washington, D.C. 20233.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used in this publication:

- Represents zero.
- (D) Withheld to avoid disclosing data for individual companies; data are included in higher level totals.
- (NA) Not available.
- (NC) Not comparable.
- (S) Withheld because estimate did not meet publication standards on the basis of either the response rate or a consistency review.
- (X) Not applicable.
- (Z) Less than half the unit shown.
- n.e.c. Not elsewhere classified.
- n.s.k. Not specified by kind.
- pt. Part.
- r Revised.
- SIC Standard Industrial Classification.

Other abbreviations, such as lb, gal, yd, doz, bbl, and s tons, are used in the customary sense.

Users' Guide for Locating Statistics

[For explanation of terms, see appendixes]

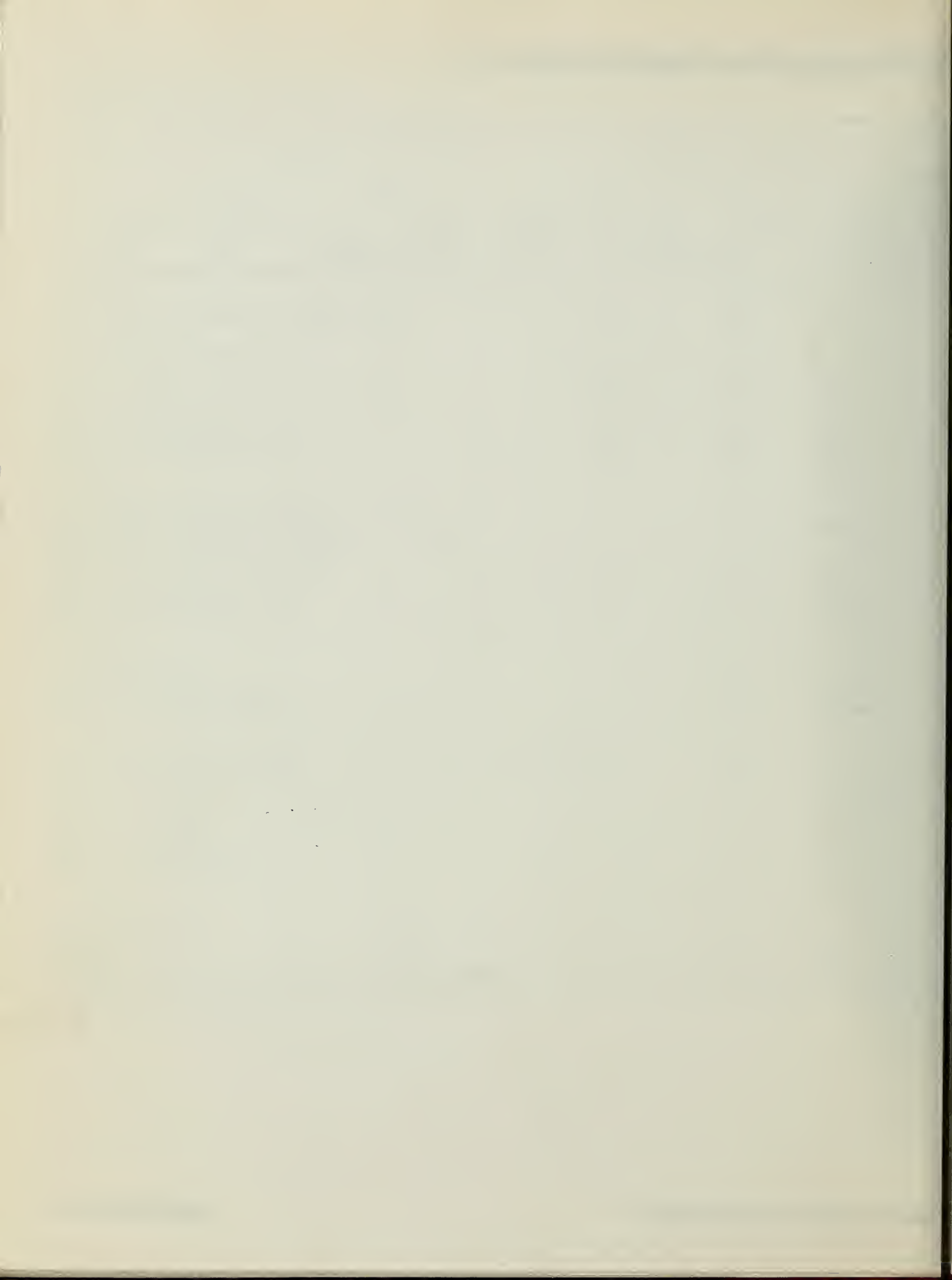
	Item	Four-digit industry statistics		
		Historical	Operating ratios	By geographic area
1	Number of companies	1a		
2	Number of manufacturing establishments	1a		2
	Employment and payroll:			
3	Number of employees	1a	1b	2
4	Payroll	1a	1b	2
5	Supplemental labor costs			
6	Production workers	1a	1b	2
7	Production-worker hours	1a	1b	2
8	Production-worker wages	1a	1b	2
	Shipments, cost of materials, and value added:			
9	Value of shipments (four-digit)	1a	1b	2
10	Product class shipments (five-digit)			
11	Product shipments (seven-digit)			
12	Value added by manufacture	1a	1b	2
13	Cost of materials	1a	1b	2
14	Fuels and electric energy			
15	Materials consumed by kind			
	Inventories:			
16	Total, end of year	1a		
17	By method of valuation			
18	By stage of fabrication			
	Capital expenditures, assets, rental payments, and purchased services:			
19	New capital expenditures	1a		2
20	Used plant and equipment expenditures			
21	Gross assets			
22	Depreciation			
23	Retirements of buildings and machinery			
24	Rental payments			
25	Purchased services			
	Ratios:			
26	Specialization	1a		
27	Coverage	1a		

*Number of companies with shipments of over \$100 thousand.

**Detailed information shown.

n This Report by Table Number

Four-digit industry statistics – Con.				Five-digit product class and seven-digit product statistics				
Summary and supplemental	By employ-ment size	By industry and product class specialization	Materials consumed by kind	Industry-product analysis	Product shipments	Product class by geographic area	Historical product class	
3a					*6a			1
**3a	4	5a						2
3a	4	5a						3
3a	4	5a						4
**3d								5
**3a	4	5a						6
**3a	4	5a						7
3a	4	5a						8
3a	4	5a		5b, 5c				9
				5b, 5c	6a	6b	6c	10
					6a			11
3a	4	5a						12
**3a	4	5a						13
3a, 3d			7					14
								15
3b, 3c	4							16
3b, 3c								17
3b								18
**3a, **3d	4	5a						19
**3a, **3d								20
**3d								21
**3d								22
**3d								23
**3d								24
**3d								25
3a				5b				26
3a				5b				27



Electric Lighting and Wiring Equipment

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DESCRIPTION OF INDUSTRIES AND SUMMARY OF FINDINGS

ELECTRIC LIGHTING AND WIRING EQUIPMENT

This report shows 1982 Census of Manufactures statistics for establishments classified in each of the following industries:

SIC Code and Title

3641	Electric Lamps
3643	Current-Carrying Wiring Devices
3644	Noncurrent-Carrying Wiring Devices
3645	Residential Lighting Fixtures
3646	Commercial Lighting Fixtures
3647	Vehicular Lighting Equipment
3648	Lighting Equipment N.E.C.

The industry statistics (employment, payroll, cost of materials, value of shipments, inventories, etc.) are reported for each establishment as a whole. Aggregates of such data for an industry reflect not only the primary activities of the establishments but also their activities in the manufacture of secondary products as well as their miscellaneous activities (contract work on materials owned by others, repair work, etc.). This fact should be taken into account in comparing industry statistics (tables 1a-5a) with product statistics (table 6a) showing shipments by all industries of the primary products of the specified industry. The extent of the "product mix" is indicated in table 5b, which shows the value of primary and secondary products shipped by establishments classified in the specified industry and the value of primary products of the industry shipped as secondary products by establishments classified in other industries.

Small single-unit companies with up to 20 employees (cutoff varied by industry) were excluded from the mail portion of the census. For these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated), data on payrolls and receipts were obtained from administrative records of other government agencies. The remaining statistics were developed from industry averages.

Establishment data were tabulated based on industry definitions contained in the 1972 Standard Industrial Classification (SIC) Manual and its 1977 supplement.¹

INDUSTRY 3641, ELECTRIC LAMPS

This industry comprises establishments primarily engaged in the manufacture of electric lamp bulbs.

In the 1982 Census of Manufactures, Industry 3641, Electric Lamps, recorded employment of 22.4 thousand. The total value of shipments for establishments classified in this industry was \$2,073 million.

¹Standard Industrial Classification Manual: 1972. For sale by Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Stock No. 041-001-00066-6. 1977 Supplement. Stock No. 003-005-00176-0.

The value of shipments figure shown above is in current (1982) prices. All dollar figures included in this report are at prices current for the year specified and, therefore, unadjusted for changes in price levels. Consequently, when making comparisons to prior years, users should take into consideration the inflation that has occurred.

The employment figure shown above was 22 percent below the 28.7 thousand reported in 1977. The leading States in employment in 1982 were Ohio, Pennsylvania, Massachusetts, and Kentucky, accounting for approximately 51 percent of the industry's 1982 employment. Data for Ohio, Pennsylvania, and Massachusetts have been withheld to avoid disclosing data for individual companies. These same States were the leaders in 1977, when they accounted for approximately 50 percent of the industry's employment.

Compared with 1981, employment decreased 8 percent. The 1981 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

Establishments in virtually all industries ship secondary products as well as products primary to the industry to which they are classified and have some miscellaneous receipts, such as resales and contract receipts. In current prices, industry 3641 shipped \$1,986 million of products primary to the industry, \$46 million of secondary products, and had \$41 million of miscellaneous receipts. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in the industry was 98 percent (specialization ratio). In 1977, this specialization ratio was 97 percent.

Establishments in this industry also accounted for 98 percent of products considered primary to the industry no matter where they actually were produced (coverage ratio). In 1977, the coverage ratio also was 98 percent. The products primary to industry 3641, no matter in what industry they were produced, appear in table 6a and aggregate to \$2,026 million in current prices.

The total cost of materials and services used by establishments classified in the electric lamps industry amounted to \$793 million in current prices. Data on specific materials consumed appear in table 7.

Establishments of single-unit companies in this industry with up to 20 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 3 percent of total value of shipments.

INDUSTRY 3643, CURRENT-CARRYING WIRING DEVICES

This industry comprises establishments primarily engaged in the manufacture of such devices as electrical outlets, lamp sockets, connectors, receptacles, and snap switches.

Establishments primarily engaged in the manufacture of noncurrent-carrying wiring devices are classified in industry 3644, and electric power wire and cable in industry 3357.

In the 1982 Census of Manufactures, Industry 3643, Current-Carrying Wiring Devices, recorded employment of 44.5 thousand. The total value of shipments for establishments classified in this industry was \$2,510 million.

The value of shipments figure shown above is in current (1982) prices. All dollar figures included in this report are at prices current for the year specified and, therefore, unadjusted for changes in price levels. Consequently, when making comparisons to prior years, users should take into consideration the inflation that has occurred.

The employment figure shown above was 1 percent above the 43.9 thousand reported in 1977. The leading States in employment in 1982 were Illinois, New York, Pennsylvania, and Connecticut, accounting for approximately 47 percent of the industry's 1982 employment. These same States were the leaders in 1977, when they accounted for approximately 49 percent of the industry's employment, although there has been some shift in the relative importance of individual States.

Compared with 1981, employment decreased 14 percent. The 1981 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

Establishments in virtually all industries ship secondary products as well as products primary to the industry to which they are classified and have some miscellaneous receipts, such as resales and contract receipts. In current prices, industry 3643 shipped \$2,088 million of products primary to the industry, \$360 million of secondary products, and had \$62 million of miscellaneous receipts. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in the industry was 85 percent (specialization ratio). In 1977, this specialization ratio was 84 percent.

Establishments in this industry also accounted for 76 percent of products considered primary to the industry no matter where they actually were produced (coverage ratio). In 1977, the coverage ratio was 79 percent. The products primary to industry 3643, no matter in what industry they were produced, appear in table 6a and aggregate to \$2,761 million in current prices.

The total cost of materials and services used by establishments classified in the current-carrying wiring devices industry amounted to \$997 million in current prices. Data on specific materials consumed appear in table 7.

Establishments of single-unit companies in this industry with up to 20 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 5 percent of total value of shipments.

INDUSTRY 3644, NONCURRENT-CARRYING WIRING DEVICES

This industry comprises establishments primarily engaged in the manufacture of noncurrent-carrying wiring devices. Establishments primarily engaged in the manufacture of current-carrying wiring devices are classified in industry 3643.

In the 1982 Census of Manufactures, Industry 3644, Noncurrent-Carrying Wiring Devices, recorded employment of 26.3 thousand. The total value of shipments for establishments classified in this industry was \$2,400 million.

The value of shipments figure shown above is in current (1982) prices. All dollar figures included in this report are at prices current for the year specified and, therefore, unadjusted for changes in price levels. Consequently, when making comparisons to prior years, users should take into consideration the inflation that has occurred.

The employment figure shown above was 2 percent above the 25.8 thousand reported in 1977. The leading States in employment in 1982 were New York, Illinois, Missouri, and Ohio, accounting for approximately 49 percent of the industry's 1982 employment. This represents a shift from 1977 when Illinois, New York, Ohio, and Pennsylvania accounted for approximately 51 percent of the industry's employment.

Compared with 1981, employment decreased 7 percent. The 1981 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

Establishments in virtually all industries ship secondary products as well as products primary to the industry to which they are classified and have some miscellaneous receipts, such as resales and contract receipts. In current prices, industry 3644 shipped \$1,827 million of products primary to the industry, \$489 million of secondary products, and had \$84 million of miscellaneous receipts. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in the industry was 79 percent (specialization ratio). In 1977, this specialization ratio was 82 percent.

Establishments in this industry also accounted for 88 percent of products considered primary to the industry no matter where they actually were produced (coverage ratio). In 1977, the coverage ratio was 83 percent. The products primary to industry 3644, no matter in what industry they were produced, appear in table 6a and aggregate to \$2,082 million in current prices.

The total cost of materials and services used by establishments classified in the noncurrent-carrying wiring devices industry amounted to \$1,130 million in current prices. Data on specific materials consumed appear in table 7.

Establishments of single-unit companies in this industry with up to 10 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 5 percent of total value of shipments.

INDUSTRY 3645, RESIDENTIAL LIGHTING FIXTURES

This industry comprises establishments primarily engaged in the manufacture of residential lighting fixtures. Establishments primarily engaged in the manufacture of commercial and industrial lighting fixtures are classified in industry 3646, vehicular lighting equipment in industry 3647, and lamp bulbs in industry 3641.

In the 1982 Census of Manufactures, Industry 3645, Residential Lighting Fixtures, recorded employment of 22.2 thousand. The total value of shipments for establishments classified in this industry was \$1,392 million.

The value of shipments figure shown above is in current (1982) prices. All dollar figures included in this report are at prices current for the year specified and, therefore, unadjusted for changes in price levels. Consequently, when making comparisons to prior years, users should take into consideration the inflation that has occurred.

The employment figure shown above was 6 percent below the 23.7 thousand reported in 1977. The leading States in employment in 1982 were New York, California, Pennsylvania, and New Jersey, accounting for approximately 61 percent of the industry's 1982 employment. This represents a shift from 1977 when New York, Pennsylvania, Illinois, and Ohio accounted for approximately 50 percent of the industry's employment.

Compared with 1981, employment decreased 7 percent. The 1981 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

Establishments in virtually all industries ship secondary products as well as products primary to the industry to which they are classified and have some miscellaneous receipts, such as resales and contract receipts. In current prices, industry 3645 shipped \$1,225 million of products primary to the industry, \$98 million of secondary products, and had \$28 million of miscellaneous receipts. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in the industry was 93 percent (specialization ratio). In 1977, this specialization ratio was 95 percent.

Establishments in this industry also accounted for 95 percent of products considered primary to the industry no matter where they actually were produced (coverage ratio). In 1977, the coverage ratio was 92 percent. The products primary to industry 3645, no matter in what industry they were produced, appear in table 6a and aggregate to \$1,290 million in current prices.

The total cost of materials and services used by establishments classified in the residential lighting fixtures industry amounted to \$635 million in current prices. Data on specific materials consumed appear in table 7.

Establishments of single-unit companies in this industry with up to 5 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 28 percent of total value of shipments.

INDUSTRY 3646, COMMERCIAL LIGHTING FIXTURES

This industry comprises establishments primarily engaged in the manufacture of commercial lighting fixtures. Establishments primarily engaged in the manufacture of residential lighting fixtures are classified in industry 3645.

In the 1982 Census of Manufactures, Industry 3646, Commercial Lighting Fixtures, recorded employment of 18.9 thousand. The total value of shipments for establishments classified in this industry was \$1,672 million.

The value of shipments figure shown above is in current (1982) prices. All dollar figures included in this report are at prices current for the year specified and, therefore, unadjusted for

changes in price levels. Consequently, when making comparisons to prior years, users should take into consideration the inflation that has occurred.

The employment figure shown above was 21 percent above the 15.6 thousand reported in 1977. The leading States in employment in 1982 were California, Georgia, New York, and Illinois, accounting for approximately 45 percent of the industry's 1982 employment. Data for Georgia have been withheld to avoid disclosing data for individual companies. This represents a shift from 1977 when California, Georgia, New York, and New Jersey accounted for approximately 40 percent of the industry's employment.

Compared with 1981, employment increased 1 percent. The 1981 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

Establishments in virtually all industries ship secondary products as well as products primary to the industry to which they are classified and have some miscellaneous receipts, such as resales and contract receipts. In current prices, industry 3646 shipped \$1,499 million of products primary to the industry, \$152 million of secondary products, and had \$21 million of miscellaneous receipts. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in the industry was 91 percent (specialization ratio). In 1977, this specialization ratio was 90 percent.

Establishments in this industry also accounted for 87 percent of products considered primary to the industry no matter where they actually were produced (coverage ratio). In 1977, the coverage ratio was 86 percent. The products primary to industry 3646, no matter in what industry they were produced, appear in table 6a and aggregate to \$1,721 million in current prices.

The total cost of materials and services used by establishments classified in the commercial lighting fixtures industry amounted to \$892 million in current prices. Data on specific materials consumed appear in table 7.

Establishments of single-unit companies in this industry with up to 20 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 14 percent of total value of shipments.

INDUSTRY 3647, VEHICULAR LIGHTING EQUIPMENT

This industry comprises establishments primarily engaged in the manufacture of vehicular lighting equipment.

In the 1982 Census of Manufactures, Industry 3647, Vehicular Lighting Equipment, recorded employment of 12.9 thousand. The total value of shipments for establishments classified in this industry was \$1,014 million.

The value of shipments figure shown above is in current (1982) prices. All dollar figures included in this report are at prices current for the year specified and, therefore, unadjusted for changes in price levels. Consequently, when making comparisons to prior years, users should take into consideration the inflation that has occurred.

The employment figure shown above was 11 percent below the 14.5 thousand reported in 1977. The leading States in

employment in 1982 were Indiana, Ohio, New York, and New Jersey, accounting for approximately 70 percent of the industry's 1982 employment. Data for Indiana, New York, and Ohio have been withheld to avoid disclosing data for individual companies. This represents a shift from 1977 when Indiana, Ohio, New York, and Illinois accounted for approximately 75 percent of the industry's employment.

Compared with 1981, employment decreased 3 percent. The 1981 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

Establishments in virtually all industries ship secondary products as well as products primary to the industry to which they are classified and have some miscellaneous receipts, such as resales and contract receipts. In current prices, industry 3647 shipped \$639 million of products primary to the industry, \$344 million of secondary products, and had \$30 million of miscellaneous receipts. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in the industry was 65 percent (specialization ratio). In 1977, this specialization ratio was 68 percent.

Establishments in this industry also accounted for 96 percent of products considered primary to the industry no matter where they actually were produced (coverage ratio). In 1977, the coverage ratio was 94 percent. The products primary to industry 3647, no matter in what industry they were produced, appear in table 6a and aggregate to \$668 million in current prices.

The total cost of materials and services used by establishments classified in the vehicular lighting equipment industry amounted to \$411 million in current prices. Data on specific materials consumed appear in table 7.

Establishments of single-unit companies in this industry with up to 10 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 11 percent of total value of shipments.

INDUSTRY 3648, LIGHTING EQUIPMENT, N.E.C.

This industry comprises establishments primarily engaged in the manufacture of outdoor lighting equipment, flashlights and lanterns, and miscellaneous lighting equipment, not elsewhere classified.

In the 1982 Census of Manufactures, Industry 3648, Lighting Equipment, N.E.C., recorded employment of 12.2 thousand. The

total value of shipments for establishments classified in this industry was \$1,028 million.

The value of shipments figure shown above is in current (1982) prices. All dollar figures included in this report are at prices current for the year specified and, therefore, unadjusted for changes in price levels. Consequently, when making comparisons to prior years, users should take into consideration the inflation that has occurred.

The employment figure shown above was 5 percent below the 12.8 thousand reported in 1977. The leading States in employment in 1982 were North Carolina, California, New York, and Illinois, accounting for approximately 40 percent of the industry's 1982 employment. Data for North Carolina have been withheld to avoid disclosing data for individual companies. This represents a shift from 1977 when California, Ohio, Massachusetts, and Illinois accounted for approximately 40 percent of the industry's employment.

Compared with 1981, employment decreased 16 percent. The 1981 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

Establishments in virtually all industries ship secondary products as well as products primary to the industry to which they are classified and have some miscellaneous receipts such, as resales and contract receipts. In current prices, industry 3648 shipped \$862 million of products primary to the industry, \$134 million of secondary products, and had \$32 million of miscellaneous receipts. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in the industry was 87 percent (specialization ratio). In 1977, this specialization ratio was 85 percent.

Establishments in this industry also accounted for 74 percent of products considered primary to the industry no matter where they actually were produced (coverage ratio). In 1977, the coverage ratio was 81 percent. The products primary to industry 3648, no matter in what industry they were produced, appear in table 6a and aggregate to \$1,170 million in current prices.

The total cost of materials and services used by establishments classified in the lighting equipment, n.e.c., industry amounted to \$454 million in current prices. Data on specific materials consumed appear in table 7.

Establishments of single-unit companies in this industry with up to 5 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 14 percent of total value of shipments.

Table 1a. **Historical Statistics for the Industry: 1982 and Earlier Years**

[Excludes data for auxiliaries. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Year ¹	All establishments ³			All employees		Production workers			Value added by manufacture ⁴ (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	End-of-year inventories ⁴ (million dollars)	Ratios	
	Companies ² (no.)	Total (no.)	With 20 employees or more (no.)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						Specialization (percent)	Coverage (percent)
INDUSTRY 3641, ELECTRIC LAMPS															
1982 Census-----	115	149	61	22.4	396.9	18.9	33.5	310.3	1 283.8	792.7	2 072.6	60.5	193.7	98	98
1981 ASM-----	(NA)	(NA)	(NA)	24.4	392.0	20.7	38.1	314.3	1 276.3	743.3	2 010.1	57.7	140.3	(NA)	(NA)
1980 ASM-----	(NA)	(NA)	(NA)	26.8	396.3	23.1	42.7	321.7	1 298.8	723.8	2 024.8	79.8	131.8	(NA)	(NA)
1979 ASM-----	(NA)	(NA)	(NA)	29.9	399.8	26.1	49.6	326.6	1 398.7	733.0	2 117.4	64.5	141.7	(NA)	(NA)
1978 ASM-----	(NA)	(NA)	(NA)	28.9	365.8	25.4	48.6	300.8	1 251.2	646.8	1 903.4	51.4	116.3	(NA)	(NA)
1977 Census-----	128	167	64	28.7	322.4	25.3	47.5	266.3	1 089.2	574.9	1 651.4	36.6	121.4	97	98
1976 ASM-----	(NA)	(NA)	(NA)	28.4	288.3	25.0	47.7	237.8	979.2	503.6	1 477.9	35.6	99.7	(NA)	(NA)
1975 ASM-----	(NA)	(NA)	(NA)	26.7	241.6	23.4	43.2	195.1	819.2	399.2	1 211.7	34.7	91.3	(NA)	(NA)
1974 ASM-----	(NA)	(NA)	(NA)	30.4	247.7	27.2	49.0	201.7	802.6	379.9	1 187.7	44.5	83.6	(NA)	(NA)
1973 ASM-----	(NA)	(NA)	(NA)	30.9	249.2	27.4	54.5	204.9	774.0	374.4	1 141.3	32.1	88.8	(NA)	(NA)
1972 Census-----	102	143	72	31.5	239.7	27.1	52.2	185.7	724.4	366.3	1 095.7	31.1	110.1	95	96
1971 ASM-----	(NA)	(NA)	(NA)	30.5	216.9	26.3	50.5	169.4	648.5	317.4	961.9	33.7	111.1	(NA)	(NA)
1970 ASM-----	(NA)	(NA)	(NA)	32.5	216.2	28.2	52.7	170.9	591.2	311.1	891.6	32.0	106.2	(NA)	(NA)
1969 ASM-----	(NA)	(NA)	(NA)	31.8	192.8	27.7	51.1	151.2	549.9	294.6	842.5	31.3	96.1	(NA)	(NA)
1968 ASM-----	(NA)	(NA)	(NA)	31.1	188.4	27.1	52.9	149.7	585.6	283.3	863.9	37.9	91.4	(NA)	(NA)
1967 Census-----	72	106	65	29.5	169.9	25.8	49.9	136.0	533.4	252.6	781.8	48.2	83.7	94	95
INDUSTRY 3643, CURRENT-CARRYING WIRING DEVICES															
1982 Census-----	361	415	222	44.5	699.8	31.9	57.2	421.6	1 464.2	996.7	2 510.3	88.8	500.0	85	76
1981 ASM-----	(NA)	(NA)	(NA)	51.7	736.4	38.6	72.8	464.3	1 597.3	1 185.3	2 762.2	103.7	499.7	(NA)	(NA)
1980 ASM-----	(NA)	(NA)	(NA)	50.7	666.3	38.0	71.2	419.3	1 501.6	1 109.0	2 603.5	116.3	454.8	(NA)	(NA)
1979 ASM-----	(NA)	(NA)	(NA)	53.7	642.3	41.3	78.7	421.2	1 454.1	1 044.6	2 453.6	99.9	454.4	(NA)	(NA)
1978 ASM-----	(NA)	(NA)	(NA)	44.7	513.3	34.7	68.0	333.9	1 109.9	772.0	1 893.4	59.5	347.6	(NA)	(NA)
1977 Census-----	362	413	198	43.9	480.3	33.6	66.2	312.1	1 100.1	738.7	1 795.2	55.8	341.5	84	79
1976 ASM-----	(NA)	(NA)	(NA)	43.8	432.2	33.0	63.7	274.5	1 044.6	668.5	1 681.8	37.6	330.8	(NA)	(NA)
1975 ASM-----	(NA)	(NA)	(NA)	37.0	344.2	26.6	49.3	201.5	727.4	498.2	1 247.3	34.5	284.7	(NA)	(NA)
1974 ASM-----	(NA)	(NA)	(NA)	55.0	470.6	41.2	79.4	291.4	1 088.3	730.9	1 777.3	64.8	393.0	(NA)	(NA)
1973 ASM-----	(NA)	(NA)	(NA)	51.9	406.3	40.7	80.1	266.2	881.7	594.4	1 443.4	47.1	307.6	(NA)	(NA)
1972 Census-----	366	401	210	50.4	382.5	39.0	76.2	244.6	792.1	492.0	1 255.9	53.7	257.2	83	81
1971 ASM-----	(NA)	(NA)	(NA)	39.8	286.1	30.0	57.7	183.5	613.7	377.1	986.7	27.8	219.1	(NA)	(NA)
1970 ASM-----	(NA)	(NA)	(NA)	44.1	292.8	33.8	65.6	193.6	609.3	408.5	1 008.8	28.7	213.7	(NA)	(NA)
1969 ASM-----	(NA)	(NA)	(NA)	43.7	280.4	34.3	67.7	186.4	632.3	389.3	1 008.2	28.0	197.7	(NA)	(NA)
1968 ASM-----	(NA)	(NA)	(NA)	42.2	257.9	32.9	64.8	168.8	546.9	365.2	910.9	26.8	170.1	(NA)	(NA)
1967 Census-----	351	375	185	40.1	234.4	30.5	60.1	151.3	507.4	330.0	837.0	29.8	162.5	78	78
INDUSTRY 3644, NONCURRENT-CARRYING WIRING DEVICES															
1982 Census-----	187	226	140	26.3	509.9	18.1	35.3	314.0	1 218.7	1 130.5	2 399.6	69.1	575.2	79	88
1981 ASM-----	(NA)	(NA)	(NA)	28.4	540.1	19.5	38.4	327.1	1 276.8	1 181.5	2 404.8	74.2	540.3	(NA)	(NA)
1980 ASM-----	(NA)	(NA)	(NA)	28.5	477.8	19.8	37.9	296.5	1 146.3	1 043.2	2 174.5	69.5	475.7	(NA)	(NA)
1979 ASM-----	(NA)	(NA)	(NA)	30.3	464.6	21.5	42.4	299.4	1 131.4	1 063.4	2 151.9	64.8	469.7	(NA)	(NA)
1978 ASM-----	(NA)	(NA)	(NA)	27.3	382.6	19.7	38.3	245.8	896.0	841.3	1 719.8	43.5	407.4	(NA)	(NA)
1977 Census-----	173	202	123	25.8	330.1	18.4	35.9	210.9	744.4	682.4	1 421.8	32.8	350.5	82	83
1976 ASM-----	(NA)	(NA)	(NA)	24.4	290.5	17.1	32.9	182.7	639.0	618.4	1 239.9	25.2	329.5	(NA)	(NA)
1975 ASM-----	(NA)	(NA)	(NA)	23.8	271.5	16.8	32.0	175.3	588.5	550.6	1 152.8	39.9	306.6	(NA)	(NA)
1974 ASM-----	(NA)	(NA)	(NA)	26.5	276.6	19.8	38.3	185.4	676.1	542.1	1 158.2	35.6	318.2	(NA)	(NA)
1973 ASM-----	(NA)	(NA)	(NA)	27.3	254.4	20.6	40.8	175.2	555.6	484.8	1 026.9	36.4	223.7	(NA)	(NA)
1972 Census-----	149	179	117	25.7	217.0	19.3	37.7	147.0	490.8	400.8	886.4	25.2	186.8	78	78
1971 ASM-----	(NA)	(NA)	(NA)	23.8	186.9	17.4	34.0	122.2	434.7	338.3	772.0	26.7	167.8	(NA)	(NA)
1970 ASM-----	(NA)	(NA)	(NA)	26.5	211.5	19.4	38.8	131.5	457.0	349.7	790.5	28.2	184.3	(NA)	(NA)
1969 ASM-----	(NA)	(NA)	(NA)	27.8	210.9	20.1	40.1	132.4	468.3	360.1	812.1	29.8	171.9	(NA)	(NA)
1968 ASM-----	(NA)	(NA)	(NA)	24.1	178.5	17.6	36.5	116.8	406.0	307.6	709.5	22.4	150.3	(NA)	(NA)
1967 Census-----	158	174	105	22.9	158.1	16.8	33.5	102.0	344.7	297.4	637.9	20.2	134.6	74	82
INDUSTRY 3645, RESIDENTIAL LIGHTING FIXTURES															
1982 Census-----	610	643	250	22.2	308.8	16.9	31.5	194.7	708.7	634.5	1 351.8	17.9	280.2	93	95
1981 ASM-----	(NA)	(NA)	(NA)	23.8	296.8	18.1	34.9	186.7	598.6	607.2	1 202.4	14.4	245.3	(NA)	(NA)
1980 ASM-----	(NA)	(NA)	(NA)	24.0	271.1	18.3	34.3	169.5	536.9	599.6	1 147.5	16.5	226.1	(NA)	(NA)
1979 ASM-----	(NA)	(NA)	(NA)	25.8	267.9	20.1	36.7	170.5	547.3	584.4	1 115.2	17.6	230.3	(NA)	(NA)
1978 ASM-----	(NA)	(NA)	(NA)	24.6	252.5	19.3	35.0	160.6	551.6	567.6	1 110.6	16.0	213.7	(NA)	(NA)
1977 Census-----	676	710	244	23.7	229.5	18.2	33.4	139.4	494.2	495.6	986.6	11.8	193.2	95	92
1976 ASM-----	(NA)	(NA)	(NA)	21.4	206.8	16.7	30.6	128.6	428.5	428.9	843.0	14.4	161.3	(NA)	(NA)
1975 ASM-----	(NA)	(NA)	(NA)	18.5	172.8	14.1	26.4	103.2	332.3	352.6	688.5	15.0	134.6	(NA)	(NA)
1974 ASM-----	(NA)	(NA)	(NA)	21.6	183.1	16.7	30.9	109.6	374.0	369.6	747.2	19.5	144.0	(NA)	(NA)
1973 ASM-----	(NA)	(NA)	(NA)	28.0	204.8	22.3	42.2	132.2	415.2	422.1	829.6	12.2	158.3	(NA)	(NA)
1972 Census-----	665	701	278	26.5	189.3	21.0	40.6	120.7	390.2	386.5	767.2	13.7	137.7	97	93
INDUSTRY 3646, COMMERCIAL LIGHTING FIXTURES															
1982 Census-----	219	243	140	18.9	313.3	13.4	25.7	184.2	774.8	892.3	1 671.9	32.0	290.8	91	87
1981 ASM-----	(NA)	(NA)	(NA)	18.8	277.5	13.2	25.0	156.8	722.7	867.7	1 605.9	27.6	251.5	(NA)	(NA)
1980 ASM-----	(NA)	(NA)	(NA)	18.7	250.0	13.2	24.8	143.1	681.0	798.9	1 463.3	32.9	254.9	(NA)	(NA)
1979 ASM-----	(NA)	(NA)	(NA)	18.7	223.2	13.0	25.4	132.4	651.1	699.7	1 339.3	25.2	250.7	(NA)	(NA)
1978 ASM-----	(NA)	(NA)	(NA)	16.8	193.5	12.0	22.9	115.9	502.0	572.8	1 062.5	20.8	208.8	(NA)	(NA)
1977 Census-----	192	218	122	15.6	169.1	11.1	20.6	98.8	434.7	498.4	922.7	18.0	182.3	90	86
1976 ASM-----	(NA)	(NA)	(NA)	15.4	154.2	11.5	21.5	91.9	391.8	435.2	818.8	13.4	168.8	(NA)	(NA)
1975 ASM-----	(NA)	(NA)	(NA)	15.7	148.3	11.3	21.3	90.8	347.2	411.4	765.4	11.8	151.7	(NA)	(NA)
1974 ASM-----	(NA)	(NA)	(NA)	18.9	161.4	14.2	27.4	101.6	389.9	452.1	828.0	21.7	175.5	(NA)	(NA)
1973 ASM-----	(NA)	(NA)	(NA)	20.1	167.9	15.5	29.4	105.3							

See footnotes at end of table.

Table 1a. Historical Statistics for the Industry: 1982 and Earlier Years—Con.

Excludes data for auxiliaries. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Year ¹	All establishments ³			All employees		Production workers			Value added by manufacture ⁴ (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	End-of-year inventories ⁴ (million dollars)	Ratios	
	Companies ² (no.)	Total (no.)	With 20 employees or more (no.)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						Specialization (percent)	Coverage (percent)
	INDUSTRY 3647, VEHICULAR LIGHTING EQUIPMENT														
1982 Census-----	77	84	54	12.9	281.6	9.6	18.8	193.4	602.4	411.2	1 013.6	43.8	122.9	65	96
1981 ASM-----	(NA)	(NA)	(NA)	13.3	292.9	10.0	19.4	206.6	564.5	387.9	956.3	70.0	116.0	(NA)	(NA)
1980 ASM-----	(NA)	(NA)	(NA)	12.9	265.6	9.8	18.8	185.0	506.2	365.5	876.0	51.1	114.8	(NA)	(NA)
1979 ASM-----	(NA)	(NA)	(NA)	15.8	285.2	12.5	24.9	205.8	603.3	461.4	1 061.5	51.1	121.6	(NA)	(NA)
1978 ASM-----	(NA)	(NA)	(NA)	15.8	279.8	12.5	25.2	204.6	602.2	468.8	1 057.2	41.2	113.9	(NA)	(NA)
1977 Census-----	70	75	43	14.5	246.0	11.4	23.3	178.8	536.0	388.9	908.5	46.3	97.1	68	94
1976 ASM-----	(NA)	(NA)	(NA)	14.4	211.9	11.2	22.5	151.3	453.5	330.3	771.1	21.4	91.3	(NA)	(NA)
1975 ASM-----	(NA)	(NA)	(NA)	12.8	168.6	9.9	19.2	119.2	333.1	247.6	590.6	15.2	69.0	(NA)	(NA)
1974 ASM-----	(NA)	(NA)	(NA)	14.7	175.1	11.5	22.7	125.1	326.0	277.2	598.0	46.6	82.3	(NA)	(NA)
1973 ASM-----	(NA)	(NA)	(NA)	14.5	171.8	11.5	23.9	124.3	331.2	257.8	577.4	33.7	69.4	(NA)	(NA)
1972 Census ⁵ -----	45	47	31	13.6	142.1	10.7	21.5	101.9	299.8	205.2	499.8	7.2	50.3	68	94
	INDUSTRY 3648, LIGHTING EQUIPMENT, N.E.C.														
1982 Census-----	222	233	113	12.2	207.9	8.5	16.1	121.2	566.4	454.4	1 028.0	28.0	188.6	87	74
1981 ASM-----	(NA)	(NA)	(NA)	14.5	233.9	10.1	20.0	135.0	613.0	536.0	1 133.1	32.0	197.9	(NA)	(NA)
1980 ASM-----	(NA)	(NA)	(NA)	14.5	209.4	10.2	20.1	121.2	562.3	479.4	1 031.6	28.4	174.3	(NA)	(NA)
1979 ASM-----	(NA)	(NA)	(NA)	14.0	182.8	10.0	19.5	106.3	499.3	414.7	897.9	25.0	163.4	(NA)	(NA)
1978 ASM-----	(NA)	(NA)	(NA)	12.7	159.4	9.1	17.6	93.6	394.3	369.7	762.2	22.3	135.6	(NA)	(NA)
1977 Census-----	208	223	119	12.8	148.0	9.1	17.7	85.7	342.5	332.7	670.6	15.8	128.5	85	81
1976 ASM-----	(NA)	(NA)	(NA)	11.4	116.6	8.4	15.8	69.0	267.7	243.6	510.0	14.4	95.8	(NA)	(NA)
1975 ASM-----	(NA)	(NA)	(NA)	10.6	103.0	7.4	14.1	59.7	244.4	224.8	475.4	11.6	91.1	(NA)	(NA)
1974 ASM-----	(NA)	(NA)	(NA)	12.5	112.4	8.9	17.4	67.3	289.7	251.4	538.1	19.3	102.1	(NA)	(NA)
1973 ASM-----	(NA)	(NA)	(NA)	13.0	112.2	9.5	18.8	68.0	284.9	241.0	521.1	18.9	98.9	(NA)	(NA)
1972 Census ⁵ -----	172	190	95	12.7	107.9	9.2	18.4	63.1	254.3	219.4	466.5	16.6	85.5	86	79

¹In annual survey of manufactures (ASM) years, data are estimates based on a representative sample of establishments canvassed annually and may differ from results of a complete canvass of all establishments. ASM publication shows percentage standard errors. Unless otherwise noted, for data prior to 1967, see 1967 Census of Manufactures, vol. II, table 1 of the industry chapter.

²For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

³Includes establishments with payroll at any time during year.

⁴Effective with the 1982 Economic Censuses, uniform instructions for reporting inventories were introduced for all sector reports. Up to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). In 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Because of this change in reporting instructions, the 1982 data for inventories and value added by manufacture included in the tables of this report are not comparable to the prior-year data shown above and in historical census of manufactures and annual survey of manufactures publications. Inventories and value added data estimated on a basis comparable to the historical data, using the reported information for 1982, are shown below:

Industries	End-of-1981 inventories (million dollars)	End-of-1982 inventories (million dollars)	1982 value added by manufacture (million dollars)
Industry 3641, Electric lamps	160.1	143.5	1 256.4
Industry 3643, Current-carrying wiring devices	476.7	420.4	1 599.6
Industry 3644, Noncurrent-carrying wiring devices	548.4	459.1	1 230.9
Industry 3645, Residential lighting fixtures	280.3	261.4	711.4
Industry 3646, Commercial lighting fixtures	280.3	265.3	774.3
Industry 3647, Vehicular lighting fixtures	115.2	110.8	600.9
Industry 3648, Lighting equipment, n.e.c.	163.4	153.3	565.8

See Inventories in appendixes for explanation of the difference between end-of-1981 inventory figure shown in table and corresponding figure shown in footnote.

⁵Industry was defined or redefined for 1972 Census of Manufactures, so data are available only for years shown.

Table 1b. Selected Operating Ratios for the Industry: 1982 and Earlier Years

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Year	Payroll per employee (dollars)	Production workers as percent of total employment (percent)	Annual hours of production workers (number)	Average hourly earnings of production workers (dollars)	Cost of materials as percent of value of shipments (percent)	Cost of materials and payroll as percent of value of shipments (percent)	Value added per employee (dollars)	Payroll as percent of value added (percent)	Value added per production worker hour (dollars)
INDUSTRY 3641, ELECTRIC LAMPS									
1982 Census.....	17 719	84	1 772	9.26	38	57	58 826	30	39.33
1981 ASM.....	16 066	85	1 841	8.25	37	56	52 307	31	33.50
1980 ASM.....	14 787	86	1 848	7.53	36	55	48 463	31	30.42
1979 ASM.....	13 371	87	1 900	6.58	35	53	46 779	29	28.20
1978 ASM.....	12 657	88	1 913	6.19	34	53	43 294	29	25.74
1977 Census.....	11 233	88	1 877	5.61	35	54	37 951	30	22.93
1976 ASM.....	10 151	88	1 908	4.99	34	54	34 479	29	20.53
1975 ASM.....	9 049	88	1 846	4.52	33	53	30 682	29	18.96
1974 ASM.....	8 148	89	1 801	4.12	32	53	26 401	31	16.38
1973 ASM.....	8 065	89	1 989	3.76	33	55	25 049	32	14.20

See footnotes at end of table.

Table 1b. Selected Operating Ratios for the Industry: 1982 and Earlier Years—Con.

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Year	Payroll per employee (dollars)	Production workers as percent of total employment (percent)	Annual hours of production workers (number)	Average hourly earnings of production workers (dollars)	Cost of materials as percent of value of shipments (percent)	Cost of materials and payroll as percent of value of shipments (percent)	Value added per employee (dollars)	Payroll as percent of value added (percent)	Value added per production worker hour (dollars)
INDUSTRY 3641, ELECTRIC LAMPS—Con.									
1972 Census.....	7 610	86	1 926	3.56	33	55	22 997	33	13.88
1971 ASM.....	7 111	86	1 920	3.35	33	56	21 262	33	12.84
1970 ASM.....	6 652	87	1 869	3.24	35	59	18 191	37	11.22
1969 ASM.....	6 063	87	1 845	2.96	35	58	17 292	35	10.76
1968 ASM.....	6 058	87	1 952	2.83	33	55	18 830	32	11.07
1967 Census.....	5 759	87	1 934	2.73	32	54	18 081	32	10.69
INDUSTRY 3643, CURRENT-CARRYING WIRING DEVICES									
1982 Census.....	15 726	72	1 793	7.37	40	68	32 903	48	25.60
1981 ASM.....	14 242	75	1 886	6.38	43	70	30 896	46	21.94
1980 ASM.....	13 142	75	1 874	5.89	43	68	29 617	44	21.09
1979 ASM.....	11 961	77	1 906	5.35	43	69	27 078	44	18.48
1978 ASM.....	11 483	78	1 960	4.91	41	68	24 830	46	16.32
1977 Census.....	10 941	77	1 970	4.71	41	68	25 059	44	16.62
1976 ASM.....	9 868	75	1 930	4.31	40	65	23 849	41	16.40
1975 ASM.....	9 303	72	1 853	4.09	40	68	19 659	47	14.75
1974 ASM.....	8 556	75	1 927	3.67	41	68	19 787	43	13.71
1973 ASM.....	7 829	78	1 968	3.32	41	69	16 988	46	11.01
1972 Census.....	7 589	77	1 954	3.21	39	70	15 716	48	10.40
1971 ASM.....	7 188	75	1 923	3.18	38	67	15 420	47	10.64
1970 ASM.....	6 639	77	1 941	2.95	40	70	13 816	48	9.29
1969 ASM.....	6 416	78	1 974	2.75	39	66	14 469	44	9.34
1968 ASM.....	6 111	78	1 970	2.60	40	68	12 960	47	8.44
1967 Census.....	5 845	76	1 970	2.52	39	67	12 653	46	8.44
INDUSTRY 3644, NONCURRENT-CARRYING WIRING DEVICES									
1982 Census.....	19 388	69	1 950	8.90	47	68	46 338	42	34.52
1981 ASM.....	19 018	69	1 969	8.52	49	72	44 958	42	33.25
1980 ASM.....	16 765	69	1 914	7.82	48	70	40 221	42	30.25
1979 ASM.....	15 333	71	1 972	7.06	49	71	37 340	41	26.68
1978 ASM.....	14 015	72	1 944	6.42	49	71	32 821	43	23.39
1977 Census.....	12 795	71	1 951	5.87	48	71	28 853	44	20.74
1976 ASM.....	11 906	70	1 924	5.55	50	73	26 189	45	19.42
1975 ASM.....	11 408	71	1 905	5.48	48	71	24 727	46	18.39
1974 ASM.....	10 438	75	1 934	4.84	47	71	25 513	41	17.65
1973 ASM.....	9 319	75	1 981	4.29	47	72	20 352	46	13.62
1972 Census.....	8 444	75	1 953	3.90	45	70	19 097	44	13.02
1971 ASM.....	7 853	73	1 954	3.59	44	68	18 265	43	12.79
1970 ASM.....	7 981	73	2 000	3.39	44	71	17 245	46	11.78
1969 ASM.....	7 586	72	1 995	3.30	44	70	16 845	45	11.68
1968 ASM.....	7 407	73	2 074	3.20	43	69	16 846	44	11.12
1967 Census.....	6 904	73	1 994	3.04	47	71	15 052	46	10.29
INDUSTRY 3645, RESIDENTIAL LIGHTING FIXTURES									
1982 Census.....	13 910	76	1 864	6.18	47	70	31 923	44	22.50
1981 ASM.....	12 471	76	1 928	5.35	50	75	25 151	50	17.15
1980 ASM.....	11 296	76	1 874	4.94	52	76	22 371	50	15.65
1979 ASM.....	10 384	78	1 826	4.65	52	76	21 213	49	14.91
1978 ASM.....	10 264	78	1 813	4.59	51	74	22 423	46	15.76
1977 Census.....	9 684	77	1 835	4.17	50	73	20 852	46	14.80
1976 ASM.....	9 664	78	1 832	4.20	51	75	20 023	48	14.00
1975 ASM.....	9 341	76	1 872	3.91	51	76	17 962	52	12.59
1974 ASM.....	8 477	77	1 850	3.55	49	74	17 315	49	12.10
1973 ASM.....	7 314	80	1 892	3.13	51	76	14 829	49	9.84
1972 Census.....	7 143	79	1 933	2.97	50	75	14 725	49	9.61
INDUSTRY 3646, COMMERCIAL LIGHTING FIXTURES									
1982 Census.....	16 577	71	1 918	7.17	53	72	40 995	40	30.15
1981 ASM.....	14 761	70	1 894	6.27	54	71	38 441	38	28.91
1980 ASM.....	13 369	71	1 879	5.77	55	72	36 417	37	27.46
1979 ASM.....	11 936	70	1 954	5.21	52	69	34 818	34	25.63
1978 ASM.....	11 518	71	1 908	5.06	54	72	29 881	39	21.92
1977 Census.....	10 840	71	1 856	4.80	54	72	27 865	39	21.10
1976 ASM.....	10 013	75	1 870	4.27	53	72	25 442	39	18.22
1975 ASM.....	9 446	72	1 885	4.26	54	73	22 115	43	16.30
1974 ASM.....	8 540	75	1 930	3.71	55	74	20 630	41	14.23
1973 ASM.....	8 353	77	1 897	3.58	55	77	17 761	47	12.14
1972 Census.....	7 888	74	1 929	3.45	52	73	18 638	42	12.98
INDUSTRY 3647, VEHICULAR LIGHTING EQUIPMENT									
1982 Census.....	21 829	74	1 958	10.29	41	68	46 698	47	32.04
1981 ASM.....	22 023	75	1 940	10.65	41	71	42 444	52	29.10
1980 ASM.....	20 589	76	1 918	9.84	42	72	39 240	52	26.93
1979 ASM.....	18 051	79	1 992	8.27	43	70	38 184	47	24.23
1978 ASM.....	17 709	79	2 016	8.12	44	71	38 114	46	23.90
1977 Census.....	16 966	79	2 044	7.67	43	70	36 966	46	23.00
1976 ASM.....	14 715	78	2 009	6.72	43	70	31 493	47	20.16
1975 ASM.....	13 172	77	1 939	6.21	42	70	26 023	51	17.35
1974 ASM.....	11 912	78	1 974	5.51	46	76	22 177	54	14.36
1973 ASM.....	11 848	79	2 078	5.20	45	74	22 841	52	13.86
1972 Census.....	10 449	79	2 009	4.74	41	69	22 044	47	13.94

See footnotes at end of table.

Table 1b. Selected Operating Ratios for the Industry: 1982 and Earlier Years—Con.

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Year	Payroll per employee (dollars)	Production workers as percent of total employment (percent)	Annual hours of production workers (number)	Average hourly earnings of production workers (dollars)	Cost of materials as percent of value of shipments (percent)	Cost of materials and payroll as percent of value of shipments (percent)	Value added per employee (dollars)	Payroll as percent of value added (percent)	Value added per production worker hour (dollars)
INDUSTRY 3648, LIGHTING EQUIPMENT, N.E.C.									
1982 Census	17 041	70	1 894	7.53	44	64	46 426	37	35.18
1981 ASM	16 131	70	1 980	6.75	47	68	42 214	38	30.60
1980 ASM	14 441	70	1 971	6.03	46	67	38 779	37	27.98
1979 ASM	13 057	71	1 950	5.45	46	67	35 664	37	25.61
1978 ASM	12 551	72	1 934	5.32	49	69	31 047	40	22.40
1977 Census	11 563	71	1 945	4.85	50	72	26 766	43	19.36
1976 ASM	10 228	74	1 881	4.37	48	71	23 482	44	16.94
1975 ASM	9 717	70	1 905	4.23	47	69	23 057	42	17.33
1974 ASM	8 992	71	1 955	3.87	47	68	23 176	39	16.65
1973 ASM	8 631	73	1 979	3.62	46	68	21 915	39	15.15
1972 Census	8 496	72	2 000	3.43	47	70	20 024	42	13.82

Note: For qualifications of data, see footnotes on table 1a.

Table 2. Industry Statistics for Selected States: 1982 and 1977

[Excludes data for auxiliaries. Includes data for States with 150 employees or more. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Industry and geographic area	1982											1977		
	E ¹	All establishments ²		All employees		Production workers			Value added by manufacture ⁴ (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	All employees ³ (1,000)	Value added by manufacture (million dollars)
		Total (no.)	With 20 employees or more (no.)	Number ³ (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						
INDUSTRY 3641, ELECTRIC LAMPS														
United States	-	149	61	22.4	396.9	18.9	33.5	310.3	1 283.8	792.7	2 072.6	60.5	28.7	1 089.2
Alabama	-	1	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	CC	(D)
Arkansas	-	2	1	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	CC	(D)
California	E9	27	2	.2	2.6	.2	.4	2.2	7.0	4.2	11.2	.3	.4	9.6
Connecticut	-	2	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Florida	E1	4	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	CC	(D)
Illinois	-	12	4	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	EE	(D)
Indiana	-	2	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Kansas	-	1	1	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Kentucky	-	5	5	2.0	36.3	1.6	2.9	27.9	146.8	91.1	230.7	21.2	2.5	95.2
Massachusetts	-	4	3	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	FF	(D)
Mississippi	-	2	2	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Missouri	-	3	1	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	CC	(D)
New Hampshire	-	3	3	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	CC	(D)
New Jersey	-	11	6	1.2	17.9	1.0	1.9	13.3	34.5	27.6	61.8	1.3	1.7	47.0
New York	E1	16	2	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.6	24.2
Ohio	-	13	9	FF	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	FF	(D)
Pennsylvania	-	17	7	FF	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	3.5	120.6
South Carolina	-	2	2	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Tennessee	-	3	2	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	2.0	72.5
Virginia	-	2	1	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
West Virginia	-	1	1	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	EE	(D)
INDUSTRY 3643, CURRENT-CARRYING WIRING DEVICES														
United States	-	415	222	44.5	699.8	31.9	57.2	421.6	1 464.2	996.7	2 510.3	88.8	43.9	1 100.1
Alabama	-	6	3	.8	14.3	.5	.8	7.1	28.7	15.6	46.6	(D)	CC	(D)
Arkansas	-	2	2	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
California	E2	48	16	1.3	21.2	.9	1.7	12.7	34.5	26.3	62.2	1.2	1.7	42.6
Connecticut	-	19	15	3.3	61.2	2.2	4.3	33.2	151.6	72.0	230.3	8.6	3.5	92.3
Florida	-	17	8	1.3	19.8	.9	1.5	10.6	29.1	20.6	51.0	2.7	1.2	31.4
Illinois	-	30	19	7.3	135.1	4.8	9.1	79.5	258.5	147.8	421.7	18.9	8.2	212.9
Indiana	-	20	11	1.7	23.8	1.2	2.2	15.0	49.4	48.4	101.7	(D)	1.8	41.2
Kentucky	-	5	2	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Maine	-	4	3	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Massachusetts	-	21	13	2.4	38.2	1.6	3.1	20.8	93.6	53.4	146.4	5.2	1.9	50.4
Michigan	-	17	11	1.3	16.2	1.0	1.7	9.7	39.2	31.1	72.5	2.3	.3	10.1
Missouri	-	8	3	.6	7.8	.5	.8	5.0	15.7	9.9	24.9	1.1	1.9	65.4
New Hampshire	-	1	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
New Jersey	-	35	17	2.8	39.3	2.1	3.9	23.8	87.4	58.4	145.8	4.7	2.7	51.1
New York	-	38	19	6.6	106.2	4.5	7.4	59.9	197.7	161.3	364.7	14.7	6.9	166.4
North Carolina	-	9	7	2.5	30.1	2.1	3.7	21.6	56.5	29.4	88.6	2.1	2.1	38.7
Ohio	-	28	20	2.9	41.4	2.2	4.0	27.9	85.5	65.8	154.5	4.3	2.6	71.1
Pennsylvania	-	35	20	3.6	58.4	2.7	4.7	36.1	119.2	111.8	233.2	5.1	3.0	78.7
Rhode Island	-	8	5	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	FF	(D)
South Carolina	E1	2	2	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Tennessee	-	5	5	.4	5.6	.3	.7	4.2	12.2	10.3	22.5	.4	(NA)	(NA)
Texas	E6	20	8	.6	11.0	.4	.8	6.6	18.0	13.9	32.1	(D)	.3	12.6
Wisconsin	E1	8	3	.2	2.9	.2	.3	1.7	5.8	5.2	10.9	.3	(NA)	(NA)

See footnotes at end of table.

Table 2. Industry Statistics for Selected States: 1982 and 1977—Con.

[Excludes data for auxiliaries. Includes data for States with 150 employees or more. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Industry and geographic area	1982												1977	
	E ¹	All establishments ²		All employees		Production workers			Value added by manufacture ⁴ (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	All employees ³ (1,000)	Value added by manufacture (million dollars)
		Total (no.)	With 20 employees or more (no.)	Number ³ (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						
INDUSTRY 3644, NONCURRENT-CARRYING WIRING DEVICES														
United States	-	226	140	26.3	509.9	18.1	35.3	314.0	1 218.7	1 130.5	2 399.6	69.1	25.8	744.4
Alabama	E4	11	7	.9	13.4	.6	1.2	8.1	41.5	28.8	70.3	(D)	.3	7.8
Arkansas	-	2	2	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
California	-	37	18	1.6	31.0	1.2	2.4	20.2	94.9	118.4	217.7	6.5	1.5	55.3
Connecticut	-	8	4	1.5	28.0	1.1	2.1	17.6	79.9	30.9	111.0	3.1	1.6	48.3
Florida	E3	8	3	.3	5.7	.3	.6	3.9	20.0	17.6	37.5	.6	(NA)	(NA)
Georgia	-	5	4	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Illinois	-	20	13	4.2	83.7	2.9	5.5	53.1	208.2	207.9	429.0	8.8	4.7	139.7
Indiana	-	1	1	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	CC	(D)
Iowa	-	2	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Kentucky	E2	3	3	.3	4.2	.2	.4	2.8	9.7	6.3	16.2	(D)	AA	(D)
Louisiana	-	3	2	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Massachusetts	-	4	2	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Michigan	-	5	2	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.3	12.0
Minnesota	-	2	2	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	CC	(D)
Mississippi	-	1	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Missouri	-	5	5	2.2	44.5	1.2	2.3	20.2	102.3	78.1	187.2	5.9	EE	(D)
New Jersey	-	11	5	1.3	25.9	.6	1.0	10.0	47.4	29.1	74.9	4.0	EE	(D)
New York	E1	20	14	4.4	88.9	3.0	5.6	55.7	186.3	116.1	318.1	11.3	4.2	125.9
Ohio	-	19	15	2.1	39.2	1.4	2.6	22.5	73.0	53.3	128.4	2.3	2.2	49.8
Oklahoma	-	2	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Pennsylvania	-	20	15	1.9	33.0	1.4	2.9	22.9	85.5	103.8	197.4	5.0	2.0	48.8
Tennessee	-	3	3	.6	11.2	.4	.8	7.7	28.5	26.6	55.3	(D)	.5	17.3
Texas	E1	8	7	.4	6.6	.3	.6	4.3	18.8	28.4	46.0	1.8	AA	(D)
West Virginia	-	3	3	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	EE	(D)
Wisconsin	-	3	2	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	CC	(D)
INDUSTRY 3645, RESIDENTIAL LIGHTING FIXTURES														
United States	E3	643	250	22.2	308.8	16.9	31.5	194.7	708.7	634.5	1 351.8	17.9	23.7	494.2
Arkansas	-	10	3	.4	4.7	.3	.6	3.2	13.4	9.2	23.2	.2	.4	9.5
California	E3	147	54	3.9	52.9	3.0	5.7	32.9	125.6	97.2	223.9	3.1	4.4	94.0
Connecticut	E4	18	7	.4	5.3	.3	.6	3.2	13.0	12.7	25.8	.3	.4	8.5
Florida	E4	36	10	.6	6.9	.5	.9	4.1	17.1	15.1	32.2	.4	.4	7.3
Georgia	E4	7	3	.2	2.7	.2	.4	1.7	5.8	4.3	10.1	(D)	BB	(D)
Illinois	E1	54	18	1.8	27.8	1.4	2.5	17.9	65.2	38.3	102.4	(D)	2.4	50.1
Kentucky	E2	7	5	.6	7.6	.4	.8	4.8	15.3	15.4	33.2	.8	CC	(D)
Massachusetts	E3	12	6	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.7	16.3
Minnesota	E9	2	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Mississippi	-	4	2	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Missouri	E6	6	2	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.3	7.0
New Jersey	E2	45	25	2.6	39.0	2.0	3.6	23.8	78.6	66.9	147.3	1.8	2.1	38.6
New York	E2	133	53	3.9	54.7	3.0	5.7	32.9	129.9	127.6	256.6	2.0	3.8	83.7
North Carolina	-	13	4	.3	3.3	.2	.4	1.9	9.8	8.9	18.6	.1	.5	6.1
Ohio	E2	19	8	.8	11.7	.6	1.2	7.0	25.7	36.9	62.0	.1	EE	(D)
Pennsylvania	-	42	23	3.2	49.9	2.4	4.2	33.6	108.2	90.7	202.6	3.1	3.8	81.9
Rhode Island	E5	5	3	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
South Carolina	E9	2	2	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Tennessee	-	4	3	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Texas	E2	20	8	.7	8.5	.5	.9	5.0	22.1	30.6	53.8	1.2	.5	9.7
Wisconsin	-	2	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	CC	(D)
INDUSTRY 3646, COMMERCIAL LIGHTING FIXTURES														
United States	E1	243	140	18.9	313.3	13.4	25.7	184.2	774.8	892.3	1 671.9	32.0	15.6	434.7
Arkansas	-	2	1	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
California	E3	47	26	2.9	50.0	2.0	3.9	28.4	128.7	94.0	222.9	2.0	2.1	50.9
Connecticut	E3	8	4	.4	5.7	.2	.5	3.2	16.3	17.3	33.3	(D)	(NA)	(NA)
Florida	-	6	2	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Georgia	-	6	5	FF	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	EE	(D)
Illinois	E1	22	14	1.5	27.8	.9	1.7	10.7	59.4	78.1	139.5	1.6	1.3	53.2
Indiana	-	2	2	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
Massachusetts	E2	9	5	1.0	17.4	.8	1.5	12.4	44.7	40.0	85.3	1.2	.4	13.6
Michigan	E1	9	3	.2	2.5	.1	.2	1.3	6.0	3.7	9.7	.1	.2	5.2
Mississippi	-	3	3	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	EE	(D)
Missouri	-	5	3	.4	5.6	.3	.6	3.7	11.2	14.5	26.2	(D)	.4	7.5
New Jersey	E1	17	8	.9	15.0	.7	1.5	9.7	41.9	42.7	84.6	.6	1.4	44.7
New York	E2	33	20	1.6	25.7	1.2	2.2	14.7	61.5	54.7	116.4	2.5	1.5	38.6
Ohio	E1	16	9	1.1	17.8	.7	1.3	10.2	53.8	53.3	107.3	2.4	1.2	36.8
Pennsylvania	-	18	10	1.4	20.0	1.0	1.9	12.1	49.0	90.6	140.0	2.4	1.3	30.1
Rhode Island	-	3	3	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Tennessee	-	4	3	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	CC	(D)
Texas	E3	8	7	.7	11.6	.5	.9	5.8	19.8	30.8	52.5	1.4	.4	8.9
Washington	-	4	2	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	CC	(D)
Wisconsin	-	4	3	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)

See footnotes at end of table.

Table 2. Industry Statistics for Selected States: 1982 and 1977—Con.

[Excludes data for auxiliaries. Includes data for States with 150 employees or more. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Industry and geographic area	1982											1977		
	All establishments ²		All employees		Production workers			Value added by manufacture ⁴ (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	All employees ³ (1,000)	Value added by manufacture (million dollars)	
	E ¹	Total (no.)	With 20 employees or more (no.)	Number ³ (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)							Wages (million dollars)
INDUSTRY 3647, VEHICULAR LIGHTING EQUIPMENT														
United States	E1	84	54	12.9	281.6	9.6	18.8	193.4	602.4	411.2	1 013.6	43.8	14.5	536.0
California	E5	12	7	.3	3.5	.2	.4	2.2	10.0	6.6	16.4	.6	.2	4.9
Connecticut	-	5	3	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Illinois	E1	11	8	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	CC	(D)
Indiana	-	3	2	FF	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	FF	(D)
Louisiana	-	1	1	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	CC	(D)
Massachusetts	E2	2	2	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Missouri	E9	4	3	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
New Jersey	E3	6	5	.7	8.0	.5	.9	4.9	6.7	12.1	18.3	.1	CC	(D)
New York	E3	7	4	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	1.0	26.1
Ohio	-	8	7	FF	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	FF	(D)
South Carolina	-	1	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Texas	E9	1	1	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
Washington	-	2	1	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
INDUSTRY 3648, LIGHTING EQUIPMENT, N.E.C.														
United States	E1	233	113	12.2	207.9	8.5	16.1	121.2	566.4	454.4	1 028.0	28.0	12.8	342.5
California	E1	45	21	1.6	28.8	1.0	2.0	15.1	77.6	51.6	129.8	2.8	1.9	48.1
Connecticut	E1	6	6	.5	9.0	.2	.5	3.7	29.8	20.8	50.0	.7	.4	13.2
Florida	E4	7	3	.2	2.1	.1	.2	1.1	5.4	4.0	9.4	.2	(NA)	(NA)
Illinois	E1	23	11	.8	11.7	.6	1.0	6.9	33.2	33.5	67.6	2.0	1.0	30.1
Indiana	-	4	2	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Kentucky	-	4	3	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Massachusetts	E3	14	10	.7	10.3	.5	.8	5.6	22.4	18.9	42.3	.6	1.1	22.9
Minnesota	-	3	3	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Mississippi	-	2	1	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Missouri	-	5	2	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
New Hampshire	-	2	2	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
New Jersey	E2	14	2	.4	7.2	.3	.5	4.1	23.7	20.1	44.9	2.5	.9	22.4
New York	E3	27	13	.8	15.3	.5	1.0	8.0	36.1	32.6	69.1	.6	.6	18.7
North Carolina	-	4	3	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	EE	(D)
Ohio	-	12	7	.7	12.6	.5	1.0	7.6	33.9	24.4	59.6	1.2	1.1	25.7
Pennsylvania	E4	13	7	.5	7.2	.4	.8	4.6	15.4	16.9	32.1	.6	BB	(D)
Texas	E1	11	4	.7	12.3	.4	.7	5.3	28.1	23.0	52.2	1.4	.6	22.1
Vermont	-	1	1	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Virginia	-	2	2	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Wisconsin	E6	8	2	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.5	7.0

Note: For qualifications of data, see footnotes on table 1a.

¹Payroll and sales data for some small single-unit companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate the items shown for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at time data were tabulated. The following symbols are shown for those States where estimated data based on administrative records data account for 10 percent or more of figures shown: E1—10 to 19 percent; E2—20 to 29 percent; E3—30 to 39 percent; E4—40 to 49 percent; E5—50 to 59 percent; E6—60 to 69 percent; E7—70 to 79 percent; E8—80 to 89 percent; E9—90 percent or more.

²Includes establishments with payroll at any time during year.

³Statistics for some producing States have been withheld to avoid disclosing data for individual companies. However, for States with 150 employees or more, number of establishments is shown and employment size range is indicated by one of the following symbols: AA—150 to 249 employees; BB—250 to 499 employees; CC—500 to 999 employees; EE—1,000 to 2,499 employees; FF—2,500 employees or more.

⁴Beginning in 1982, all respondents were requested to report their inventories at cost or market prior to adjustment to LIFO cost. This is a change from prior years in which respondents were permitted to value their inventories using any generally accepted accounting method. Consequently, data for inventories and value added by manufacture are not comparable to prior-year data.

Table 3a. Summary Statistics for the Industry: 1982

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Electric lamps (SIC 3641)	Current-carrying wiring devices (SIC 3643)	Noncurrent-carrying wiring devices (SIC 3644)	Residential lighting fixtures (SIC 3645)	Commercial lighting fixtures (SIC 3646)	Vehicular lighting equipment (SIC 3647)	Lighting equipment, n.e.c. (SIC 3648)
Companies ¹ number..	115	361	187	610	219	77	222
All establishments ² do..	149	415	226	643	243	84	233
With 1 to 19 employees..... do..	88	193	86	393	103	30	120
With 20 to 99 employees..... do..	15	121	77	197	87	34	76
With 100 employees or more..... do..	46	101	63	53	53	20	37
All employees:							
Average for year..... 1,000..	22.4	44.5	26.3	22.2	18.9	12.9	12.2
Annual payroll ³ mil. dol..	396.9	699.8	509.9	308.8	313.3	281.6	207.9

See footnotes at end of table.

Table 3a. Summary Statistics for the Industry: 1982—Con.

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Electric lamps (SIC 3641)	Current-carrying wiring devices (SIC 3643)	Noncurrent- carrying wiring devices (SIC 3644)	Residential lighting fixtures (SIC 3645)	Commercial lighting fixtures (SIC 3646)	Vehicular lighting equipment (SIC 3647)	Lighting equipment, n.e.c. (SIC 3648)
Production workers:							
Average for year..... 1,000...	18.9	31.9	18.1	16.9	13.4	9.6	8.5
March.....do.....	20.0	33.4	18.9	17.2	13.7	9.5	8.6
May.....do.....	19.4	32.3	18.4	16.9	13.4	10.1	8.6
August.....do.....	18.6	31.7	17.6	16.8	13.3	9.5	8.4
November.....do.....	17.7	30.1	17.5	17.1	13.3	9.3	8.2
Hours..... millions.....	33.5	57.2	35.3	31.5	25.7	18.8	16.1
January to March.....do.....	8.9	14.8	9.4	7.9	6.7	4.4	4.1
April to June.....do.....	9.2	14.9	9.1	7.8	6.4	5.1	4.1
July to September.....do.....	7.8	13.7	8.2	7.8	6.1	4.7	3.9
October to December.....do.....	7.5	13.7	8.6	8.1	6.5	4.6	4.0
Wages..... mil. dol.....	310.3	421.6	314.0	194.7	184.2	193.4	121.2
Value added by manufacture⁴..... do.....	1 283.8	1 464.2	1 218.7	708.7	774.8	602.4	566.4
Cost of materials, etc.⁵..... do.....	792.7	996.7	1 130.5	634.5	892.3	411.2	454.4
Materials, parts, containers, etc., consumed.....do.....	718.0	868.9	1 005.6	586.1	851.1	370.3	413.3
Resales.....do.....	33.5	34.3	56.8	18.0	11.7	21.8	17.8
Fuels consumed ⁶.....do.....	15.3	10.1	18.2	9.1	8.5	4.9	4.8
Purchased electric energy ⁷.....do.....	23.3	28.6	37.2	10.8	10.7	12.1	8.9
Contract work.....do.....	2.5	54.8	12.7	10.4	10.4	2.1	9.6
Value of shipments, including resales.....do.....	2 072.6	2 510.3	2 399.6	1 351.8	1 671.9	1 013.6	1 028.0
Value of resales.....do.....	40.0	40.6	70.6	24.9	17.3	27.0	28.0
Manufacturers' inventories (see tables 3b and 3c)							
Capital expenditures for plant and equipment⁸.....do.....	97.7	99.7	74.9	20.1	34.3	44.8	30.9
New capital expenditures.....do.....	60.5	88.8	69.1	17.9	32.0	43.8	28.0
New buildings and other structures.....do.....	4.0	12.4	15.0	2.1	2.9	1.6	8.4
New machinery and equipment.....do.....	56.4	76.4	54.0	15.8	29.1	42.2	19.7
Used capital expenditures.....do.....	37.3	10.9	5.8	2.2	2.4	1.1	2.9
Primary product specialization ratio⁹..... percent.....	98	85	79	93	91	65	87
Coverage ratio¹⁰..... do.....	98	76	88	95	87	96	74

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during year.

³Data on supplemental labor costs are not included in annual payroll, but are shown in table 3d.

⁴Value added by manufacture is computed using inventory data reported on a cost or market basis prior to any adjustment to LIFO cost. See table 3b, footnote 1 for further explanation.

⁵Data on purchased services for the repair of buildings and machinery and for communication services are not included in cost of materials, etc., but are shown in table 3d.

⁶Data on purchased fuels by type were not collected for 1982. See MC82-S-4, Fuels and Electric Energy Consumed, for 1981 data on purchased fuels by type.

⁷Data on quantity of electric energy used for heat and power are included in table 3d.

⁸Data on capital expenditures for new machinery and equipment by type, depreciable assets, retirements, rental payments, and depreciation are included in table 3d.

⁹Represents ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for establishments classified in industry.

¹⁰Represents ratio of primary products shipped by establishments classified in industry to total shipments of such products by all manufacturing establishments, wherever classified.

Table 3b. Value of Inventories for the Industry: End of 1981 and 1982

[Million dollars. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Electric lamps (SIC 3641)		Current-carrying wiring devices (SIC 3643)		Noncurrent-carrying wiring devices (SIC 3644)		Residential lighting fixtures (SIC 3645)	
	End of 1981	End of 1982	End of 1981	End of 1982	End of 1981	End of 1982	End of 1981	End of 1982
Total Inventories¹.....	211.3	193.7	566.9	500.0	688.5	575.2	302.7	280.2
Detail by method of valuation:								
Subject to LIFO costing ²	154.9	142.2	222.1	201.0	477.5	376.8	68.0	61.0
LIFO reserve.....	51.2	50.3	88.8	79.7	141.4	121.6	20.8	18.8
LIFO value.....	103.7	91.9	133.2	121.3	336.1	255.2	47.2	42.2
Not subject to LIFO costing.....	46.7	41.4	284.8	243.3	174.3	163.2	119.4	128.5
Valuation method not reported ³	9.7	9.3	59.8	55.3	33.4	32.0	114.1	89.4
Amount subject to LIFO reported without associated reserve and value ⁴.....	.9	.9	.2	.5	3.2	3.2	1.3	1.3
Detail by stage of fabrication:								
Finished goods.....	109.2	117.6	162.3	148.9	311.2	272.0	100.1	93.3
Work in process.....	16.9	12.3	214.8	178.9	129.1	117.8	58.0	56.2
Materials and supplies.....	85.2	63.8	189.7	172.2	248.2	185.4	144.6	130.8
Item	Commercial lighting fixtures (SIC 3646)		Vehicular lighting equipment (SIC 3647)		Lighting equipment, n.e.c. (SIC 3648)			
	End of 1981	End of 1982	End of 1981	End of 1982	End of 1981	End of 1982	End of 1981	End of 1982
Total Inventories¹.....	309.5	290.8	125.1	122.9	195.7	188.6		
Detail by method of valuation:								
Subject to LIFO costing ²	85.9	77.9	46.1	49.8	94.8	86.9		
LIFO reserve.....	29.5	27.6	9.2	12.1	31.6	35.4		
LIFO value.....	56.3	50.3	36.9	37.7	63.2	51.5		
Not subject to LIFO costing.....	161.7	153.0	69.2	64.5	72.1	73.9		
Valuation method not reported ³	61.9	60.0	9.8	8.6	28.5	27.5		
Amount subject to LIFO reported without associated reserve and value ⁴	-	-	-	-	.3	.3		
Detail by stage of fabrication:								
Finished goods.....	93.8	91.4	24.9	22.2	52.3	48.0		
Work in process.....	75.6	73.2	59.0	61.7	52.0	49.2		
Materials and supplies.....	140.2	126.3	41.3	38.9	91.4	91.5		

See footnotes at end of table.

Table 3b. Value of Inventories for the Industry: End of 1981 and 1982—Con.

¹Effective with the 1982 Economic Censuses, uniform instructions for reporting inventories were introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (LIFO, FIFO, market, to name a few). In 1982, all respondents were requested to report inventories at cost or market. LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve. For further explanation, see inventories in appendixes.
²Only includes data reported by respondents who (a) indicated amount of inventories subject to LIFO cost, and (b) provided sufficient information to determine associated LIFO reserve and value figures.
³Includes data estimated for nonresponse and nonmail administrative records and data reported by respondents who provided total inventory figures without other information.
⁴Includes data reported by respondents who indicated their inventories were subject to LIFO cost, but did not provide associated LIFO reserve and value figures.

Table 3c. Inventories by Specific Method of Valuation for the Industry: End of 1982

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Electric lamps (SIC 3641)		Current-carrying wiring devices (SIC 3643)		Noncurrent-carrying wiring devices (SIC 3644)		Residential lighting fixtures (SIC 3645)	
	Percent of total	Absolute standard error (percent)	Percent of total	Absolute standard error (percent)	Percent of total	Absolute standard error (percent)	Percent of total	Absolute standard error (percent)
Total Inventories -----	100.0	(X)	100.0	(X)	100.0	(X)	100.0	(X)
Last-In, First-Out (LIFO) methods -----	73.4	(X)	40.2	(X)	65.5	(X)	21.8	(X)
Non-LIFO methods -----	21.4	(X)	48.7	(X)	28.4	(X)	45.9	(X)
Cost basis:								
First-In, First-Out (FIFO) -----	2.5	.6	23.8	1.4	12.8	.6	30.7	1.7
Average cost -----	(Z)	(Z)	12.3	.9	3.1	.1	.5	.1
Specific or actual cost -----	2.4	.5	(S)	(S)	(S)	(S)	(S)	(S)
Standard cost -----	16.5	1.1	9.0	.8	11.3	.5	5.7	1.1
Other -----	(Z)	(Z)	1.4	.1	.4	(Z)	5.5	.7
Market basis:								
Market lower than cost -----	(Z)	(Z)	(Z)	(Z)	.2	(Z)	.9	.1
Market always used -----	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)	.8	.2
Valuation method not reported -----	4.8	(X)	11.1	(X)	5.6	(X)	31.9	(X)
Amount subject to LIFO reported without associated reserve and value -----	.4	(X)	.1	(X)	.5	(X)	.5	(X)

Item	Commercial lighting fixtures (SIC 3646)		Vehicular lighting equipment (SIC 3647)		Lighting equipment, n.e.c. (SIC 3648)	
	Percent of total	Absolute standard error (percent)	Percent of total	Absolute standard error (percent)	Percent of total	Absolute standard error (percent)
Total Inventories -----	100.0	(X)	100.0	(X)	100.0	(X)
Last-In, First-Out (LIFO) methods -----	26.8	(X)	40.5	(X)	46.1	(X)
Non-LIFO methods -----	52.6	(X)	52.5	(X)	39.2	(X)
Cost basis:						
First-In, First-Out (FIFO) -----	31.1	2.6	31.7	5.2	19.0	2.6
Average cost -----	(S)	(S)	2.4	.4	.6	.1
Specific or actual cost -----	3.3	.8	(Z)	(Z)	.7	.2
Standard cost -----	15.3	1.8	18.5	5.6	14.0	1.8
Other -----	.1	(Z)	(Z)	(Z)	.5	.1
Market basis:						
Market lower than cost -----	(Z)	(Z)	(Z)	(Z)	(S)	(S)
Market always used -----	1.5	1.2	(Z)	(Z)	(Z)	(Z)
Valuation method not reported -----	20.6	(X)	7.0	(X)	14.6	(X)
Amount subject to LIFO reported without associated reserve and value -----	(Z)	(X)	(Z)	(X)	.1	(X)

Note: The percentages shown for the LIFO and non-LIFO totals and the categories "valuation method not reported" and "amount subject to LIFO reported..." are based on the census universe estimates included in table 3b. The percentages shown for the specific non-LIFO methods of valuation (e.g., FIFO, etc.) are based on a representative sample of establishments included in the annual survey of manufactures (ASM) panel for 1982 (see appendixes for description of ASM). The absolute standard error of each of the ASM estimates is shown above.

Table 3d. Supplemental Industry Statistics Based on Sample Estimates: 1982

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Electric lamps (SIC 3641)		Current-carrying wiring devices (SIC 3643)		Noncurrent-carrying wiring devices (SIC 3644)		Residential lighting fixtures (SIC 3645)	
	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)
Supplemental labor costs:								
Total -----	118.5	2	161.4	2	124.7	2	54.9	3
Legal costs -----	38.2	2	69.5	2	48.3	2	32.7	3
Voluntary costs -----	80.3	3	91.9	3	76.4	2	22.2	4
Purchased services:								
Cost of purchased services for the repair of—								
Buildings and other structures -----	3.4	1	5.1	8	4.4	8	.6	12
Response coverage ratio (percent) ² -----	89.4	(X)	81.7	(X)	87.5	(X)	38.7	(X)
Machinery -----	15.4	1	15.2	8	17.3	3	1.9	15
Response coverage ratio (percent) ² -----	88.4	(X)	83.8	(X)	87.3	(X)	49.5	(X)
Cost of purchased communication services -----	3.2	16	10.6	6	11.5	2	2.3	12
Response coverage ratio (percent) ² -----	91.9	(X)	86.2	(X)	83.1	(X)	46.8	(X)

See footnotes at end of table.

Table 3d. Supplemental Industry Statistics Based on Sample Estimates: 1982—Con.

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Electric lamps (SIC 3641)		Current-carrying wiring devices (SIC 3643)		Noncurrent-carrying wiring devices (SIC 3644)		Residential lighting fixtures (SIC 3645)	
	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)
Electric energy used for heat and power:								
Purchased:								
Quantity (million kWh)	478.3	3	593.2	1	632.6	1	172.1	10
Cost	23.3	(X)	28.6	(X)	37.2	(X)	10.8	(X)
Generated less sold (million kWh)	-	(S)	.6	73	(S)	(S)	1.5	83
Gross book value of depreciable assets:								
Total:								
Beginning of year	784.6	3	735.6	6	708.3	3	178.5	4
New capital expenditures	53.4	4	90.6	7	57.9	5	12.4	12
Used capital expenditures	36.3	2	11.2	5	5.3	9	.9	5
Retirements	62.8	1	29.7	7	16.1	12	11.3	22
End of year	811.4	3	807.8	5	755.4	2	180.4	4
Buildings and other structures:								
Beginning of year	135.1	5	199.3	9	209.1	4	50.1	8
New capital expenditures	3.5	7	10.9	14	9.4	14	.9	13
Used capital expenditures	8.8	1	3.1	1	2.2	1	-	1
Retirements	8.6	1	8.3	21	4.9	35	4.3	36
End of year	138.7	5	205.0	8	215.8	4	46.8	8
Machinery and equipment:								
Beginning of year	649.5	4	536.4	6	499.2	3	128.3	4
New capital expenditures	49.9	4	79.7	7	48.4	4	11.5	13
Automobiles, trucks, etc., for highway use .....	.8	1	1.4	20	1.1	5	.4	31
Computers and peripheral data processing equipment	1.5	1	2.9	12	1.1	1	.4	18
All other	28.0	7	65.7	7	42.7	2	5.5	6
New machinery and equipment, n.s.k. ³	19.7	(S)	9.6	(S)	3.4	(S)	5.3	(S)
Used capital expenditures	27.6	2	8.2	7	3.1	14	.9	5
Retirements	54.2	1	21.4	5	11.2	5	7.0	20
End of year	672.7	4	602.8	6	539.6	2	133.7	4
Rental payments:								
Total	3.4	20	21.2	11	12.5	4	18.3	13
Buildings and other structures	1.4	23	11.9	16	4.0	5	13.1	18
Machinery and equipment	2.0	18	9.3	12	8.5	4	5.1	9
Depreciation charges during 1982:								
Total	54.4	4	64.0	5	53.0	2	14.5	4
Buildings and other structures	5.5	4	9.4	9	9.0	3	2.5	8
Machinery and equipment	48.9	5	54.5	6	43.9	2	11.9	4
Item	Commercial lighting fixtures (SIC 3646)		Vehicular lighting equipment (SIC 3647)		Lighting equipment, n.e.c. (SIC 3648)			
	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)
Supplemental labor costs:								
Total	60.6	2	80.6	2	46.9	3		
Legal costs	29.1	3	24.8	3	18.8	2		
Voluntary costs	31.5	3	55.8	3	28.1	4		
Purchased services:								
Cost of purchased services for the repair of—								
Buildings and other structures	1.2	24	1.1	11	1.5	12		
Response coverage ratio (percent) ²	70.7	(X)	96.9	(X)	86.7	(X)		
Machinery	6.1	7	4.6	7	4.0	6		
Response coverage ratio (percent) ²	73.7	(X)	96.9	(X)	85.7	(X)		
Cost of purchased communication services	4.1	4	2.5	11	2.9	8		
Response coverage ratio (percent) ²	70.9	(X)	97.6	(X)	83.1	(X)		
Electric energy used for heat and power:								
Purchased:								
Quantity (million kWh)	184.8	4	298.8	1	162.7	1		
Cost	10.7	(X)	12.1	(X)	8.9	(X)		
Generated less sold (million kWh)	-	-	-	-	-	-		
Gross book value of depreciable assets:								
Total:								
Beginning of year	292.1	6	495.0	2	262.9	4		
New capital expenditures	24.0	9	38.5	2	22.4	5		
Used capital expenditures	1.2	26	.9	1	2.6	5		
Retirements	8.7	32	14.0	10	14.4	5		
End of year	308.6	6	520.4	2	273.5	3		
Buildings and other structures:								
Beginning of year	83.0	4	104.5	4	89.4	6		
New capital expenditures	2.2	10	1.4	2	5.9	5		
Used capital expenditures	(Z)	1	.1	1	1.0	1		
Retirements	1.0	73	.3	41	3.6	14		
End of year	84.1	4	105.6	4	92.6	5		
Machinery and equipment:								
Beginning of year	209.2	9	390.6	2	173.5	3		
New capital expenditures	21.8	10	37.1	2	16.5	5		
Automobiles, trucks, etc., for highway use .....	.8	24	1.9	1	.1	33		
Computers and peripheral data processing equipment	1.0	7	1.1	2	2.6	6		
All other	14.7	7	33.1	2	12.3	5		
New machinery and equipment, n.s.k. ³	5.3	(S)	1.0	(S)	1.5	(S)		
Used capital expenditures	1.2	26	.8	1	1.7	8		
Retirements	7.7	26	13.7	9	10.8	4		
End of year	224.5	8	414.8	2	180.9	3		

See footnotes at end of table.

Table 3d. Supplemental Industry Statistics Based on Sample Estimates: 1982—Con.

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Commercial lighting fixtures (SIC 3646)		Vehicular lighting equipment (SIC 3647)		Lighting equipment, n.e.c. (SIC 3648)	
	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)
Rental payments:						
Total	14.3	7	4.1	24	5.2	11
Buildings and other structures	7.5	14	1.4	37	2.1	21
Machinery and equipment	6.8	7	2.7	18	3.1	9
Depreciation charges during 1982:						
Total	31.5	2	39.6	3	18.4	4
Buildings and other structures	6.4	6	4.2	4	4.0	6
Machinery and equipment	25.1	2	35.3	3	14.5	4

Note: Data for total new capital expenditures, new building expenditures, new machinery expenditures, and total used expenditures are also shown in table 3a. Data in table 3a are census universe totals and may differ from annual survey of manufactures (ASM) sample estimates shown in this table. Data in this table represent best estimates of year-to-year change as measured by the continuing ASM sample. However, they are subject to sampling error and, hence, as estimates of level, are not as reliable as universe figures shown in table 3a.

¹For description of relative standard error of estimate, see Qualifications of the Data in appendixes.
²Measure of extent to which respondents reported each item. Derived for each item by calculating the ratio of weighted employment for those sample establishments that reported the specific inquiry to weighted total employment for all sample establishments classified in industry. (See appendixes for explanation of sample weight.)
³Represents total machinery and equipment expenditures for establishments that did not break down their expenditures by specific type.

Table 4. Industry Statistics by Employment Size of Establishment: 1982

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Industry and employment size class	E ¹	All estab- lish- ments (no.)	All employees		Production workers			Value added by manufac- ture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expend- itures (million dollars)	End-of- year invento- ries (million dollars)
			Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)					
INDUSTRY 3641, ELECTRIC LAMPS												
Total-----	-	149	22.4	396.9	18.9	33.5	310.3	1 283.8	792.7	2 072.6	60.5	193.7
Establishments with an average of—												
1 to 4 employees-----	E9	39	.1	.8	.1	.1	.8	2.4	1.3	3.7	.1	.3
5 to 9 employees-----	E9	19	.1	1.6	.1	.2	1.4	4.8	2.8	7.6	.2	.5
10 to 19 employees-----	E8	30	.4	4.6	.4	.7	3.7	13.1	8.0	21.1	.8	1.5
20 to 49 employees-----	E8	9	.3	2.6	.2	.4	2.0	6.7	4.4	11.1	.3	.8
50 to 99 employees-----	E2	6	.4	5.7	.3	.6	3.5	9.3	8.9	19.0	.4	2.2
100 to 249 employees-----	-	11	1.9	32.4	1.5	3.0	23.6	80.6	67.9	150.1	1.6	16.2
250 to 499 employees-----	-	20	8.0	144.2	6.9	12.3	115.2	515.4	343.1	865.9	40.6	80.6
500 to 999 employees-----	-	13	11.2	205.0	9.4	16.1	160.2	651.5	356.3	994.0	16.4	91.6
1,000 to 2,499 employees-----	-	2	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Covered by administrative records ² -----	E9	86	.7	8.0	.6	1.2	6.7	23.2	13.7	37.0	1.0	2.6
INDUSTRY 3643, CURRENT-CARRYING WIRING DEVICES												
Total-----	-	415	44.5	699.8	31.9	57.2	421.6	1 464.2	996.7	2 510.3	88.8	500.0
Establishments with an average of—												
1 to 4 employees-----	E8	70	.2	2.4	.1	.2	1.6	6.8	5.3	12.2	.4	2.1
5 to 9 employees-----	E5	56	.4	5.6	.3	.5	3.7	11.1	9.9	21.2	.9	3.8
10 to 19 employees-----	E4	67	.9	13.1	.7	1.3	8.2	24.3	23.0	48.8	1.2	8.2
20 to 49 employees-----	E1	71	2.2	33.8	1.6	3.0	20.2	86.0	69.6	155.8	5.1	29.2
50 to 99 employees-----	E1	50	3.5	53.9	2.6	4.8	33.9	107.2	95.9	203.1	7.1	39.7
100 to 249 employees-----	-	62	10.6	161.0	7.7	13.9	94.1	357.1	286.5	660.3	23.5	115.1
250 to 499 employees-----	-	26	9.4	148.2	6.7	12.1	88.8	316.8	202.7	524.3	20.7	128.5
500 to 999 employees-----	-	5	3.2	59.9	2.1	4.0	33.1	144.6	78.8	230.4	8.3	43.4
1,000 to 2,499 employees-----	-	7	14.1	221.8	10.1	17.3	138.1	410.3	225.1	654.2	21.6	130.0
2,500 employees or more-----	-	1	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Covered by administrative records ² -----	E9	124	1.0	12.2	.7	1.4	7.7	25.9	19.8	46.1	1.4	8.3
INDUSTRY 3644, NONCURRENT- CARRYING WIRING DEVICES												
Total-----	-	226	26.3	509.9	18.1	35.3	314.0	1 218.7	1 130.5	2 399.6	69.1	575.2
Establishments with an average of—												
1 to 4 employees-----	E7	40	.1	1.1	.1	.1	.7	2.7	2.8	5.6	4.1	1.3
5 to 9 employees-----	E2	27	.2	3.6	.1	.2	1.9	8.6	7.4	16.3	(D)	3.5
10 to 19 employees-----	E2	19	.3	4.2	.2	.4	2.6	8.4	12.6	21.8	.6	5.5
20 to 49 employees-----	E2	40	1.3	21.6	1.0	1.9	12.8	56.4	50.1	105.8	1.7	17.6
50 to 99 employees-----	-	37	2.6	46.4	1.9	4.0	29.6	133.8	155.0	290.5	4.4	57.3
100 to 249 employees-----	-	39	6.5	119.9	4.8	9.4	75.9	288.7	364.6	663.4	20.6	149.6
250 to 499 employees-----	-	12	4.0	67.9	2.9	5.6	44.0	192.4	167.6	368.5	12.8	92.3
500 to 999 employees-----	-	9	11.3	245.3	7.2	13.7	146.6	527.8	370.5	927.8	24.8	248.1
1,000 to 2,499 employees-----	-	3	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Covered by administrative records ² -----	E9	47	.3	4.2	.2	.5	2.5	8.8	8.8	17.8	.5	4.9

See footnotes at end of table.

Table 4. Industry Statistics by Employment Size of Establishment: 1982—Con.

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Industry and employment size class	E ¹	All establishments (no.)	All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	End-of-year inventories (million dollars)
			Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)					
INDUSTRY 3645, RESIDENTIAL LIGHTING FIXTURES												
Total.....	E3	643	22.2	308.8	16.9	31.5	194.7	708.7	634.5	1 351.8	17.9	280.2
Establishments with an average of—												
1 to 4 employees.....	E8	188	.4	3.9	.3	.5	2.7	9.2	8.7	18.0	.2	4.2
5 to 9 employees.....	E5	112	.7	8.4	.5	1.0	5.7	18.8	18.8	37.4	.5	7.4
10 to 19 employees.....	E3	93	1.3	16.2	1.0	1.7	10.4	37.3	40.4	77.9	.8	12.3
20 to 49 employees.....	E3	124	4.0	51.2	3.1	5.7	32.0	122.8	113.4	236.8	3.0	44.8
50 to 99 employees.....	E2	73	5.1	70.8	3.9	7.4	43.4	178.1	160.2	339.3	3.4	72.3
100 to 249 employees.....	E3	42	5.8	74.5	4.5	8.6	46.2	174.1	161.2	338.0	5.0	64.5
250 to 499 employees.....	E1	8	2.9	44.3	2.1	3.7	27.5	95.1	61.2	157.7	2.3	39.5
500 to 999 employees.....	E1	2	2.1	39.6	1.6	2.9	26.9	73.5	70.5	146.7	2.7	35.2
1,000 to 2,499 employees.....	-	1	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Covered by administrative records ²	E9	189	.6	6.0	.4	.9	4.0	13.2	13.1	26.6	.3	6.1
INDUSTRY 3646, COMMERCIAL LIGHTING FIXTURES												
Total.....	E1	243	18.9	313.3	13.4	25.7	184.2	774.8	892.3	1 671.9	32.0	290.8
Establishments with an average of—												
1 to 4 employees.....	E7	33	.1	1.2	.1	.1	.8	3.2	4.5	7.7	.1	1.3
5 to 9 employees.....	E5	33	.2	3.8	.2	.3	2.1	9.2	14.4	23.4	.5	3.2
10 to 19 employees.....	E6	37	.5	7.7	.4	.7	4.6	22.6	24.0	46.7	5.0	5.8
20 to 49 employees.....	E2	57	1.9	31.1	1.4	2.5	17.7	73.6	74.7	148.2	3.0	29.9
50 to 99 employees.....	E3	30	2.1	35.2	1.5	2.7	19.4	79.5	84.6	164.7	2.4	27.3
100 to 249 employees.....	E1	34	5.0	81.7	3.7	7.3	47.4	194.8	182.2	380.8	6.9	66.7
250 to 499 employees.....	-	13	4.5	74.0	3.2	6.0	46.4	203.1	271.4	474.1	6.0	78.2
500 to 999 employees.....	-	5	4.5	78.6	3.1	6.1	45.8	188.7	236.5	426.3	8.2	78.5
1,000 to 2,499 employees.....	-	1	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Covered by administrative records ²	E9	46	.3	4.2	.2	.4	2.4	9.5	11.6	21.2	.5	3.4
INDUSTRY 3647, VEHICULAR LIGHTING EQUIPMENT												
Total.....	E1	84	12.9	281.6	9.6	18.8	193.4	602.4	411.2	1 013.6	43.8	122.9
Establishments with an average of—												
1 to 4 employees.....	E9	11	(Z)	.3	(Z)	(Z)	.3	.9	.6	1.5	.1	.2
5 to 9 employees.....	E9	11	.1	1.1	.1	.1	.8	3.1	2.1	5.3	.4	.6
10 to 19 employees.....	E3	8	.1	2.1	.1	.2	1.2	6.1	4.0	10.0	.4	1.6
20 to 49 employees.....	E4	20	.6	8.5	.4	.8	5.1	21.6	14.9	36.5	.8	5.1
50 to 99 employees.....	E4	14	1.0	12.6	.7	1.3	8.0	29.2	28.9	57.8	2.8	11.0
100 to 249 employees.....	E1	10	1.6	22.1	1.2	2.2	13.6	46.3	57.7	106.9	1.5	18.9
250 to 499 employees.....	E1	6	2.5	46.2	1.9	3.5	29.7	114.1	71.5	187.9	5.7	26.5
500 to 999 employees.....	-	1	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
1,000 to 2,499 employees.....	-	2	6.9	188.6	5.2	10.6	134.6	381.3	231.5	607.8	32.2	58.9
2,500 employees or more.....	-	1	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Covered by administrative records ²	E9	21	.2	2.3	.2	.3	1.6	4.6	3.1	7.8	.6	.9
INDUSTRY 3648, LIGHTING EQUIPMENT, N.E.C.												
Total.....	E1	233	12.2	207.9	8.5	16.1	121.2	566.4	454.4	1 028.0	28.0	188.6
Establishments with an average of—												
1 to 4 employees.....	E8	60	.1	1.8	.1	.2	1.1	5.1	4.2	9.4	.4	1.6
5 to 9 employees.....	E6	27	.2	2.7	.1	.3	1.6	6.3	8.4	14.7	.2	2.4
10 to 19 employees.....	E5	33	.5	7.3	.4	.6	4.2	18.1	13.9	32.5	.6	6.0
20 to 49 employees.....	E1	52	1.8	30.0	1.2	2.3	15.8	74.5	72.1	148.2	2.3	21.6
50 to 99 employees.....	E2	24	1.7	27.5	1.2	2.2	15.4	79.1	56.8	136.9	2.8	24.5
100 to 249 employees.....	E1	32	4.5	74.7	3.0	5.7	41.8	206.3	167.0	377.7	9.2	74.5
250 to 499 employees.....	-	3	3.5	64.0	2.5	4.8	41.3	176.9	131.9	308.7	12.6	58.0
500 to 999 employees.....	-	1	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
1,000 to 2,499 employees.....	-	1	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Covered by administrative records ²	E9	73	.5	6.3	.3	.7	3.7	16.0	13.3	29.6	.7	5.3

Note: For qualifications of data, see footnotes on table 1a. Data shown as a (D) are included in underscored figures above.

¹Payroll and sales data for some small single-unit companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate the items shown for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at time data were tabulated. The following symbols are shown for those States where estimated data based on administrative records data account for 10 percent or more of figures shown: E1—10 to 19 percent; E2—20 to 29 percent; E3—30 to 39 percent; E4—40 to 49 percent; E5—50 to 59 percent; E6—60 to 69 percent; E7—70 to 79 percent; E8—80 to 89 percent; E9—90 percent or more.

²Report forms were not mailed to small single-unit companies with up to 20 employees (cutoff varied by industry). Payroll and sales data for 1982 were obtained from administrative records supplied by other agencies of the Federal Government. Those data were then used in conjunction with industry averages to estimate the items shown. Data are also included in respective size classes shown.

Table 5a. Industry Statistics by Industry and Primary Product Class Specialization: 1982

[Table presents selected statistics for establishments according to their degree of specialization in products primary to their industry. Measures of plant specialization shown are (1) industry specialization: ratio of primary product shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment; and (2) product class specialization: ratio of largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment. See appendix for method of computing ratios. Statistics for establishments with specialization ratios of less than 75 percent are included in total lines but are not shown as a separate class. In addition, data may not be shown for various reasons; e.g., to avoid disclosing data for individual companies. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes.]

Industry or product class code	Industry or product class by percent of specialization	All establishments (number)	All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)
			Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)				
3641	Electric lamps:										
	Entire industry	149	22.4	396.9	18.9	33.5	310.3	1 283.8	792.7	2 072.6	60.5
	Establishments with 75 percent specialization or more ..	144	21.5	382.6	18.2	32.2	299.4	1 247.6	767.6	2 007.9	59.6
3643	Current-carrying wiring devices:										
	Entire industry	415	44.5	699.8	31.9	57.2	421.6	1 464.2	996.7	2 510.3	88.8
	Establishments with 75 percent specialization or more ..	365	29.8	461.7	21.5	39.2	277.6	988.2	724.1	1 738.0	52.9
36431	Lampholders:										
	Establishments with this product class primary	13	6.5	90.0	4.7	8.0	55.3	168.4	119.4	290.8	(D)
	Establishments with 75 percent specialization or more in class	3	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
36432	Convenience and power outlets:										
	Establishments with this product class primary	4	1.0	16.5	.7	1.3	10.8	39.6	27.8	67.6	(D)
	Establishments with 75 percent specialization or more in class	2	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
36433	Switches for electrical circuitry:										
	Establishments with this product class primary	61	17.4	276.7	12.4	23.2	170.5	548.8	337.7	916.6	30.5
	Establishments with 75 percent specialization or more in class	47	9.2	134.2	6.9	13.0	88.0	258.4	217.5	486.4	12.9
36434	Metal contacts:										
	Establishments with this product class primary	18	1.8	34.5	1.1	2.0	16.3	62.3	91.8	157.6	3.8
	Establishments with 75 percent specialization or more in class	15	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
36435	Wire connectors for electrical circuitry:										
	Establishments with this product class primary	54	5.4	91.8	3.8	7.0	55.3	229.3	147.3	382.3	17.9
	Establishments with 75 percent specialization or more in class	49	4.4	76.3	3.1	5.7	46.4	196.1	129.5	330.4	12.2
36436	Current-carrying wiring devices, n.e.c.:										
	Establishments with this product class primary	73	9.3	147.1	6.8	11.3	85.9	333.4	207.5	546.3	21.4
	Establishments with 75 percent specialization or more in class	52	4.0	59.3	3.0	5.4	34.7	124.3	88.1	214.7	6.3
3644	Noncurrent-carrying wiring devices:										
	Entire industry	226	26.3	509.9	18.1	35.3	314.0	1 218.7	1 130.5	2 399.6	69.1
	Establishments with 75 percent specialization or more ..	193	16.5	307.5	11.9	22.9	196.1	762.9	631.0	1 406.7	41.0
36441	Pole and transmission line hardware:										
	Establishments with this product class primary	36	5.7	112.4	3.8	7.2	63.1	276.8	231.6	518.5	18.7
	Establishments with 75 percent specialization or more in class	30	3.1	57.1	2.3	4.3	36.5	163.1	127.4	293.9	12.8
36442	Electrical conduit and conduit fittings:										
	Establishments with this product class primary	67	12.6	252.4	8.2	16.1	148.1	599.5	663.6	1 298.8	32.8
	Establishments with 75 percent specialization or more in class	48	5.3	97.8	3.5	7.0	55.2	250.6	273.5	530.2	13.4
36443	Noncurrent-carrying wiring devices, n.e.c.:										
	Establishments with this product class primary	51	6.9	129.0	5.3	10.5	93.2	306.3	204.1	514.5	15.7
	Establishments with 75 percent specialization or more in class	37	4.7	93.5	3.8	7.3	71.4	219.5	152.0	375.7	9.3
3645	Residential lighting fixtures:										
	Entire industry	643	22.2	308.8	16.9	31.5	194.7	708.7	634.5	1 351.8	17.9
	Establishments with 75 percent specialization or more ..	608	18.9	253.1	14.5	27.0	158.4	602.4	523.6	1 129.7	12.7
36451	Residential lighting fixtures, except portable:										
	Establishments with this product class primary	105	7.5	112.5	5.7	10.6	70.4	241.6	234.8	486.0	7.3
	Establishments with 75 percent specialization or more in class	82	5.0	71.6	3.9	7.3	45.4	168.9	159.7	333.2	4.8
36457	Portable residential type lighting fixtures:										
	Establishments with this product class primary	187	11.0	151.8	8.5	15.6	94.6	367.7	306.8	672.3	8.1
	Establishments with 75 percent specialization or more in class	170	9.7	130.8	7.5	13.7	80.1	316.5	258.7	573.5	5.3
3646	Commercial lighting fixtures:										
	Entire industry	243	18.9	313.3	13.4	25.7	184.2	774.8	892.3	1 671.9	32.0
	Establishments with 75 percent specialization or more ..	219	15.6	256.8	11.2	21.6	151.3	647.8	754.0	1 408.9	29.6
36462	Commercial and institutional lighting fixtures:										
	Establishments with this product class primary	128	15.1	252.0	10.9	21.0	149.8	629.0	731.6	1 363.3	26.9
	Establishments with 75 percent specialization or more in class	102	10.4	172.2	7.7	14.9	103.8	444.4	498.9	945.5	18.7
36463	Industrial type lighting fixtures:										
	Establishments with this product class primary	30	2.6	44.9	1.7	3.1	24.6	110.4	118.9	231.1	3.7
	Establishments with 75 percent specialization or more in class	17	.8	14.1	.5	.8	5.8	31.1	29.5	62.0	1.9
3647	Vehicular lighting equipment:										
	Entire industry	84	12.9	281.6	9.6	18.8	193.4	602.4	411.2	1 013.6	43.8
	Establishments with 75 percent specialization or more ..	74	5.8	90.9	4.3	8.5	60.8	187.5	135.7	322.6	9.2
3648	Lighting equipment, n.e.c.:										
	Entire industry	233	12.2	207.9	8.5	16.1	121.2	566.4	454.4	1 028.0	28.0
	Establishments with 75 percent specialization or more ..	207	8.2	135.7	5.5	10.6	76.1	380.1	328.5	713.8	17.8
36485	Outdoor lighting equipment:										
	Establishments with this product class primary	53	6.8	124.8	4.6	8.9	73.6	354.3	286.1	643.8	16.2
	Establishments with 75 percent specialization or more in class	42	3.7	66.5	2.4	4.7	37.2	203.6	187.9	393.6	8.1
36489	Lighting equipment, n.e.c.:										
	Establishments with this product class primary	66	4.1	65.2	2.9	5.4	37.6	165.9	132.3	301.2	10.0
	Establishments with 75 percent specialization or more in class	50	3.0	47.9	2.1	3.9	27.1	119.8	95.4	215.2	7.3

Note: For qualifications of data, see footnotes on table 1a.

Table 5b. Industry-Product Analysis—Value of Shipments and Primary Product Shipments, Specialization and Coverage Ratios for the Industry: 1982 and Earlier Census Years

[An establishment is assigned to an industry based on shipment values of products representing largest amount considered primary to an industry. Frequently, establishment shipments comprise mixtures of products assigned to an industry (primary), those considered primary to other industries (secondary), and receipts for activities such as merchandising or contract work. Columns A-D show this product pattern for an industry, and column E shows primary product specialization ratio. The extent to which an industry's primary products are shipped by establishments classified in and out of an industry is shown in columns F-H and coverage ratio is shown in column I. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Industry and product group code	Industry and census year	Value of shipments					Value of primary product shipments			
		Total (million dollars)	Primary products (million dollars)	Secondary products (million dollars)	Miscellaneous receipts (million dollars)	Primary product specialization ratio Col. B ÷ Col. B + C (percent)	Total made in all industries (million dollars)	Made in this industry (million dollars)	Made in other industries (million dollars)	Coverage ratio Col. B ÷ Col. F (percent)
		A	B	C	D	E	F	G	H	I
3641	Electric lamps ----- 1982..	2 072.6	1 985.8	45.7	41.1	98	2 025.9	1 985.8	40.0	98
	1977..	1 651.4	1 593.4	40.9	17.1	97	1 630.2	1 593.4	36.8	98
	1972..	1 095.7	1 032.4	55.1	7.8	95	1 069.1	1 032.8	36.3	97
3643	Current-carrying wiring devices ----- 1982..	2 510.3	2 088.0	360.3	62.0	85	2 761.4	2 088.0	673.4	76
	1977..	1 795.2	1 448.7	284.3	66.2	84	1 824.9	1 448.7	376.2	79
	1972..	1 255.9	971.5	203.1	81.3	83	1 206.8	971.5	235.3	81
3644	Noncurrent-carrying wiring devices ----- 1982..	2 399.6	1 827.4	488.6	83.7	79	2 082.3	1 827.4	254.9	88
	1977..	1 421.8	1 088.8	243.8	89.2	82	1 315.5	1 088.8	226.7	83
	1972..	886.4	647.6	178.9	59.9	78	832.7	647.6	185.1	78
3645	Residential lighting fixtures ----- 1982..	1 351.8	1 225.4	98.2	28.2	93	1 289.7	1 225.4	64.2	95
	1977..	986.6	893.7	47.0	45.9	95	974.6	893.7	80.9	92
	1972..	767.2	695.3	23.3	48.6	97	746.1	695.3	50.8	93
3646	Commercial lighting fixtures ----- 1982..	1 671.9	1 499.0	152.4	20.5	91	1 720.8	1 499.0	221.8	87
	1977..	922.7	805.5	93.5	23.7	90	935.0	805.5	129.5	86
	1972..	718.7	639.2	67.7	11.8	90	701.8	639.2	62.6	91
3647	Vehicular lighting equipment ----- 1982..	1 013.6	639.2	344.3	30.0	65	668.3	639.2	29.1	96
	1977..	908.5	608.1	288.9	11.5	68	646.1	608.1	38.0	94
	1972..	499.8	335.8	159.0	5.0	68	358.1	335.8	22.3	94
3648	Lighting equipment, n.e.c. ----- 1982..	1 028.0	861.6	134.2	32.2	87	1 170.3	861.6	308.7	74
	1977..	670.6	543.3	95.5	31.8	85	674.7	543.3	131.4	81
	1972..	466.5	384.6	62.2	19.7	86	488.0	384.6	103.4	79

Table 5c-1. Industry-Product Analysis—Shipments by Product Class and Industry: 1982

[Million dollars. Table shows where products of an industry (referred to as primary and listed in table 6a) are made and what products are made by establishments classified in an industry. Read down an industry column to find what products are produced in an industry. Only those product groups that have at least \$2 million in shipments from establishments classified in one of industries included in this chapter are shown. Read across to determine where products of industries in this chapter are produced. To extent that some of primary products are made in industries not included in this chapter, value of such shipments is shown in "Other industries" column. Specified "Other industries" are listed in table 5c-2 if they account for more than \$5 million of products primary to this chapter. For meaning of abbreviations and symbols, see explanatory text. For explanation of terms, see appendixes]

1982 product code	Product group, product class, and miscellaneous receipts	All industries	Electric lamps (SIC 3641)	Current-carrying wiring devices (SIC 3643)	Noncurrent-carrying wiring devices (SIC 3644)	Residential lighting fixtures (SIC 3645)	Commercial lighting fixtures (SIC 3646)	Vehicular lighting equipment (SIC 3647)	Lighting equipment, n.e.c. (SIC 3648)	Other industries
	Total	(X)	2 072.6	2 510.3	2 399.6	1 351.8	1 671.9	1 013.6	1 028.0	(X)
	Primary products	(X)	1 985.8	2 088.0	1 827.4	1 225.4	1 499.0	639.2	861.6	(X)
	Secondary products	(X)	45.7	360.3	488.6	98.2	152.4	344.3	134.2	(X)
	Miscellaneous receipts	(X)	41.1	62.0	83.7	28.2	20.5	30.0	32.2	(X)
36410	Electric lamps (bulbs only)	2 025.9	1 985.8	-	-	(D)	-	(D)	-	(D)
3643-	Current-carrying wiring devices	2 761.4	(D)	2 088.0	114.6	(D)	(D)	(D)	(D)	539.6
36431	Lampholders	154.7	(D)	144.9	2.8	(D)	(D)	-	(D)	3.3
36432	Convenience and power outlets	169.5	-	136.6	25.6	-	-	-	(D)	(D)
36433	Switches for electrical circuitry	965.5	-	777.9	(D)	-	-	(D)	-	183.5
36434	Metal contacts	164.3	-	136.1	(D)	-	-	-	-	(D)
36435	Wire connectors for electrical circuitry	591.6	-	347.4	46.7	-	-	-	-	197.5
36436	Current-carrying wiring devices, n.e.c.	569.5	-	417.9	36.7	-	(D)	-	(D)	(D)
36430	Current-carrying wiring devices, n.s.k.	146.3	-	127.3	-	-	-	(D)	(D)	(D)
3644-	Noncurrent-carrying wiring devices	2 082.3	-	67.9	1 827.4	-	-	-	(D)	(D)
36441	Pole and transmission line hardware	415.5	-	(D)	(D)	-	-	-	-	45.8
36442	Electrical conduit and conduit fittings	1 021.3	-	(D)	923.0	-	-	-	(D)	(D)
36443	Noncurrent-carrying wiring devices, n.e.c.	574.6	-	51.4	473.2	-	-	-	(D)	(D)
36440	Noncurrent-carrying wiring devices, n.s.k.	70.9	-	-	(D)	-	-	-	-	(D)
3645-	Residential lighting fixtures	1 289.7	-	(D)	-	1 225.4	31.3	-	11.0	(D)
36451	Residential lighting fixtures, except portable	469.8	-	-	-	423.2	30.2	-	(D)	(D)
36457	Portable residential type lighting fixtures	628.9	-	(D)	-	614.1	(D)	-	(D)	9.1
36450	Residential lighting fixtures, n.s.k.	191.0	-	-	-	188.1	(D)	-	(D)	(D)
3646-	Commercial lighting fixtures	1 720.8	(D)	(D)	(D)	42.5	1 499.0	(D)	85.3	72.1
36462	Commercial and institutional lighting fixtures	1 279.2	(D)	(D)	-	38.8	1 157.6	(D)	(D)	(D)
36463	Industrial type lighting fixtures	361.8	(D)	(D)	(D)	3.7	262.3	(D)	67.7	7.4
36460	Commercial lighting fixtures, n.s.k.	79.8	-	-	(D)	-	79.1	-	(D)	(D)
36470	Vehicular lighting equipment	868.3	-	(D)	-	(D)	(D)	639.2	.8	25.4
3648-	Lighting equipment, n.e.c.	1 170.3	(D)	(D)	(D)	(D)	86.0	(D)	861.6	181.3
36485	Outdoor lighting equipment	706.5	-	(D)	(D)	2.2	77.6	(D)	527.8	(D)
36489	Lighting equipment, n.e.c.	383.0	(D)	(D)	-	(D)	8.3	6.2	254.6	96.8
36480	Lighting equipment, n.e.c., n.s.k.	80.8	-	(D)	-	-	-	-	79.3	(D)

See footnotes at end of table.

Table 5c-1. Industry-Product Analysis—Shipments by Product Class and Industry: 1982—Con.

[Million dollars. Table shows where products of an industry (referred to as primary and listed in table 6a) are made and what products are made by establishments classified in an industry. Read down an industry column to find what products are produced in an industry. Only those product groups that have at least \$2 million in shipments from establishments classified in one of industries included in this chapter are shown. Read across to determine where products of industries in this chapter are produced. To extent that some of primary products are made in industries not included in this chapter, value of such shipments is shown in "Other industries" column. Specified "Other industries" are listed in table 5c-2 if they account for more than \$5 million of products primary to this chapter. For meaning of abbreviations and symbols, see explanatory text. For explanation of terms, see appendixes]

1982 product code	Product group, product class, and miscellaneous receipts	All industries	Electric lamps (SIC 3641)	Current- carrying wiring devices (SIC 3643)	Noncurrent- carrying wiring devices (SIC 3644)	Residential lighting fixtures (SIC 3645)	Commercial lighting fixtures (SIC 3646)	Vehicular lighting equipment (SIC 3647)	Lighting equipment, n.e.c. (SIC 3648)	Other industries
OTHER SHIPMENTS BY FOUR-DIGIT PRODUCT GROUP										
3079-	Miscellaneous plastics products	(X)	(D)	(D)	8.8	-	(D)	-	1.4	(X)
3229-	Pressed and blown glass, n.e.c.	(X)	(D)	-	-	-	(D)	-	-	(X)
3231-	Products of purchased glass	(X)	-	-	-	(D)	-	23.4	(D)	(X)
3293-	Gaskets, packing, and sealing devices	(X)	-	-	(D)	-	-	-	-	(X)
3315-	Steel wire and related products	(X)	-	-	(D)	-	-	-	-	(X)
3316-	Cold finishing of steel shapes	(X)	-	-	(D)	-	-	-	-	(X)
3317-	Steel pipe and tubes	(X)	-	-	(D)	-	-	-	-	(X)
3322-	Malleable iron castings	(X)	-	-	(D)	-	-	-	-	(X)
3351-	Copper rolling and drawing	(X)	-	-	(D)	-	-	-	-	(X)
3353-	Aluminum sheet, plate, and foil	(X)	-	-	(D)	-	-	-	-	(X)
3354-	Aluminum extruded products	(X)	-	-	(D)	-	-	-	-	(X)
3357-	Nonferrous wire drawing and insulating	(X)	-	40.2	-	-	-	-	-	(X)
3423-	Hand and edge tools, n.e.c.	(X)	-	(D)	(D)	-	-	-	-	(X)
3429-	Hardware, n.e.c.	(X)	-	-	(D)	(D)	-	(D)	-	(X)
3432-	Plumbing fittings and brass goods	(X)	-	(D)	(D)	-	-	-	-	(X)
3441-	Fabricated structural metal	(X)	-	-	(D)	-	(D)	-	-	(X)
3443-	Fabricated plate work (boiler shops)	(X)	-	-	(D)	-	-	-	-	(X)
3444-	Sheet metal work	(X)	-	(D)	-	-	(D)	-	(D)	(X)
3451-	Screw machine products	(X)	-	(D)	-	-	-	-	-	(X)
3452-	Bolts, nuts, rivets, and washers	(X)	-	-	(D)	-	-	-	-	(X)
3465-	Automotive stampings	(X)	-	(D)	-	-	-	-	(D)	(X)
3469-	Metal stampings, n.e.c.	(X)	-	(D)	(D)	(D)	-	-	4.6	(X)
3479-	Metal coating and allied services	(X)	-	-	-	-	-	(D)	-	(X)
3494-	Valves and pipe fittings	(X)	-	(D)	(D)	-	-	-	(D)	(X)
3498-	Fabricated pipe and fittings	(X)	-	-	(D)	-	-	-	-	(X)
3499-	Fabricated metal products, n.e.c.	(X)	(D)	.8	-	-	-	-	(D)	(X)
3523-	Farm machinery and equipment	(X)	-	-	-	-	(D)	-	-	(X)
3544-	Special dies, tools, jigs, and fixtures	(X)	-	(D)	-	-	-	(D)	(D)	(X)
3573-	Electronic computing equipment	(X)	-	(D)	-	-	-	-	-	(X)
3599-	Machinery, except electrical, n.e.c.	(X)	-	(D)	(D)	(D)	-	-	(D)	(X)
3613-	Switchgear and switchboard apparatus	(X)	-	57.2	(D)	-	-	(D)	-	(X)
3621-	Motors and generators	(X)	-	(D)	-	-	-	-	(D)	(X)
3622-	Industrial controls	(X)	(D)	53.1	(D)	-	-	-	-	(X)
3623-	Welding apparatus, electric	(X)	-	(D)	-	-	-	-	-	(X)
3632-	Household refrigerators and freezers	(X)	-	-	-	-	-	(D)	-	(X)
3634-	Electric housewares and fans	(X)	-	-	-	(D)	-	-	-	(X)
3674-	Semiconductors and related devices	(X)	-	-	-	(D)	-	-	-	(X)
3677-	Electronic coils and transformers	(X)	(D)	-	-	-	-	-	-	(X)
3678-	Electronic connectors	(X)	-	3.3	-	-	-	-	-	(X)
3679-	Electronic components, n.e.c.	(X)	-	8.8	(D)	(D)	-	(D)	-	(X)
3694-	Engine electrical equipment	(X)	-	.3	-	-	-	(D)	(D)	(X)
3699-	Electrical equipment and supplies, n.e.c.	(X)	(D)	4.7	-	-	-	-	-	(X)
3714-	Motor vehicle parts and accessories	(X)	-	(D)	-	(D)	-	(D)	(D)	(X)
3728-	Aircraft equipment, n.e.c.	(X)	-	-	-	-	(D)	-	-	(X)
3743-	Railroad equipment	(X)	-	-	(D)	-	-	-	-	(X)
3822-	Environmental controls	(X)	-	9.4	-	-	-	-	-	(X)
3832-	Optical instruments and lenses	(X)	-	-	(D)	(D)	-	-	-	(X)
3999-	Manufacturing industries, n.e.c.	(X)	-	-	-	(D)	-	-	(D)	(X)
MISCELLANEOUS RECEIPTS										
93000 00	Receipts for work done for others on their materials	(X)	(D)	7.6	6.3	2.1	(D)	(D)	(D)	(X)
99980 00	Miscellaneous receipts, including receipts for repair work, sales of scrap and refuse, etc.	(X)	(D)	(D)	(X)	(D)	(D)	(D)	(D)	(X)
99980 13	Sales of scrap and refuse	(X)	(X)	5.1	(D)	(D)	.4	(D)	.5	(X)
99980 41	Receipts for research and development work	(X)	(X)	(D)	(D)	(X)	(X)	(X)	(X)	(X)
99980 98	Other miscellaneous receipts, including receipts for repair work, etc.	(X)	(X)	6.6	4.8	(D)	2.2	(D)	2.0	(X)
99989 00	Sales of products bought and resold without further manufacture, processing, or assembly at establishment	(X)	40.0	40.6	70.6	24.9	17.3	27.0	28.0	(X)

Table 5c-2. Industry-Product Analysis—Other Industries With Shipments of Primary Products: 1982

[Million dollars. Table is a continuation of table 5c-1 and shows where products of industries in this chapter (referred to as primary products and listed in table 6a) are made. To extent that some of primary products are made in industries not included in this chapter, value of such shipments is shown in "Other industries" column of table 5c-1. Specified "Other industries" are listed in this table if they account for more than \$5 million of products primary to this chapter. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

1982 product code	Other industries	Value	1982 product code	Other industries	Value
3641-	ELECTRIC LAMP BULBS		3644-	NONCURRENT-CARRYING WIRING DEVICES	
	3674 Semiconductors and related devices	(D)		3079 Miscellaneous plastics products	20.4
				3317 Steel pipe and tubes	(D)
				3357 Nonferrous wire drawing and insulating	31.1
				3494 Valves and pipe fittings	(D)
				3613 Switchgear and switchboard apparatus.....	17.1
				3661 Telephone and telegraph apparatus	(D)
				3679 Electronic components, n.e.c.	(D)
				3861 Photographic equipment and supplies.....	(D)
3643-	CURRENT-CARRYING WIRING DEVICES		3646-	COMMERCIAL LIGHTING FIXTURES	
	3264 Porcelain electrical supplies	(D)		2522 Metal office furniture	(D)
	3399 Primary metal products, n.e.c.	(D)		3357 Nonferrous wire drawing and insulating	(D)
	3544 Special dies, tools, jigs, and fixtures	(D)		3634 Electric housewares and fans	(D)
	3612 Transformers	62.2		3841 Surgical and medical instruments.....	(D)
	3613 Switchgear and switchboard apparatus.....	58.9	3647-	VEHICULAR LIGHTING EQUIPMENT	
	3622 Industrial controls	16.1		3662 Radio and TV communication equipment.....	(D)
	3629 Electrical industrial apparatus, n.e.c.	(D)	3648-	LIGHTING EQUIPMENT, N.E.C.	
	3661 Telephone and telegraph apparatus	(D)		2522 Metal office furniture	(D)
	3662 Radio and TV communication equipment.....	(D)		3441 Fabricated structural metal	(D)
	3678 Electronic connectors	82.6		3499 Fabricated metal products, n.e.c.	(D)
	3679 Electronic components, n.e.c.	(D)		3523 Farm machinery and equipment	(D)
	3694 Engine electrical equipment.....	(D)		3585 Refrigeration and heating equipment.....	(D)
	3699 Electrical equipment and supplies, n.e.c.	5.8		3613 Switchgear and switchboard apparatus.....	12.3
	3822 Environmental controls	(D)		3692 Primary batteries, dry and wet	(D)
	3861 Photographic equipment and supplies.....	(D)		3693 X-ray, electromedical, and electrotherapeutic apparatus...	(D)
				3873 Watches, clocks, and watchcases	(D)

Table 6a. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1982 and 1977

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text]

1982 product code	Product	1982			1977		
		Number of companies with shipments of \$100,000 or more	Product shipments ¹		Number of companies with shipments of \$100,000 or more	Product shipments ¹	
			Quantity ²	Value (million dollars)		Quantity ²	Value (million dollars)
	ELECTRIC LAMPS						
3641- —	Total	(NA)	(X)	2 025.9	(NA)	(X)	1 630.2
36410 —	Electric lamps (bulbs only) including sealed beam lamps:						
36410 20	Electric lamps (bulbs only):						
	As reported in the census of manufactures	20	(X)	1 977.2	22	(X)	1 571.7
	As reported in the Current Industrial Report MQ-36B, Electric Lamps (Bulbs Only)	(NA)	(X)	³ 2 116.4	(NA)	(X)	³ 1 626.7
	Photographic incandescent:						
	Photoflash, including blue:						
36410 26	Ag (all glass) lamps	(NA)	2.9	.4	(NA)	27.7	2.6
36410 24	M-types	(NA)	8.6	1.7	(NA)	55.7	7.7
36410 21	Flash cubes	(NA)	1 333.5	140.0	(NA)	2 223.5	230.8
36410 22	Other flash lamps	(NA)	3.8	1.0	(NA)	10.8	1.8
	Projection:						
36410 28	Bulk packed	(NA)	2.1	10.2	(NA)	3.6	11.6
36410 29	All other	(NA)	8.6	67.6	(NA)	9.5	46.8
36410 25	Photoflood, photo-enlarger, and other photolamps	(NA)	1.9	7.0	(NA)	2.7	5.8
	Large incandescent, except photographic and Christmas tree:						
	General lighting:						
	15 to 150 watt, 100 to 130 volts:						
36410 08	White lamps	(NA)	485.0	154.2	(NA)	506.3	116.9
36410 09	All other	(NA)	669.3	206.8	(NA)	674.9	152.1
36410 12	More than 150 watt, 100 to 130 volts	(NA)	27.2	28.5	(NA)	46.3	26.9
36410 13	Three-way, 100 to 130 volts	(NA)	55.3	42.9	(NA)	52.5	26.7
	Reflector, 100 to 130 volts:						
36410 14	Par type (pressed glass)	(NA)	32.3	89.3	(NA)	29.4	56.8
36410 19	R-type (blown glass)	(NA)	36.6	74.7	(NA)	31.5	40.8
36410 15	Infrared (all types)	(NA)	4.2	17.1	(NA)	5.8	14.1
36410 16	Traffic and street lighting, 100 to 130 volts	(NA)	7.1	6.8	(NA)	7.8	4.4
36410 17	Rough and vibration service, 100 to 130 volts	(NA)	25.1	22.3	(NA)	28.6	14.7
	Tungsten halogen (excludes 650 watt sunlamps):						
36410 05	General lighting	(NA)	3.5	34.9	(NA)	3.1	23.6
36410 06	Other	(NA)	1.2	21.6	(NA)	1.4	16.2
36410 07	Decorative, less than 150 watt, 100 to 130 volt	(NA)	48.7	30.7	(NA)	44.1	21.8
36410 18	All other large incandescent (special purpose) (including less than 15 watt and other than 100 to 130 volts)	(NA)	151.9	90.3	(NA)	183.2	65.4

See footnotes at end of table.

Table 6a. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1982 and 1977—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text]

1982 product code	Product	1982			1977		
		Number of companies with shipments of \$100,000 or more	Product shipments ¹		Number of companies with shipments of \$100,000 or more	Product shipments ¹	
			Quantity ²	Value (million dollars)		Quantity ²	Value (million dollars)
	ELECTRIC LAMPS—Con.						
36410 —	Electric lamps (bulbs only) including sealed beam lamps—						
36410 20	Con. Electric lamps (bulbs only)—Con. As reported in the Current Industrial Report MQ-36B, Electric Lamps (Bulbs Only) —Con. Miniature incandescent, except Christmas tree: Automobile glass and metal sealed beams: Less than 6 inches:						
36410 30	Bulk packed ----- millions--	(NA)	24.9	59.7	(NA)	35.4	49.5
36410 31	All other ----- do--	(NA)	31.4	94.0	(NA)	22.9	33.7
36410 32	6 inches or more:						
36410 37	Bulk packed ----- do--	(NA)	5.7	20.4	(NA)	21.5	28.1
	All other ----- do--	(NA)	29.2	64.4	(NA)	21.6	28.9
	Automobile miniature other than glass and metal sealed beams:						
36410 33	Bulk packed ----- do--	(NA)	252.0	27.7	(NA)	514.6	48.3
36410 36	All other ----- do--	(NA)	185.1	40.0	(NA)	186.3	34.6
36410 34	Flashlight ----- do--	(NA)	17.6	3.6	(NA)	34.5	4.1
36410 35	Radio panel ----- do--	(NA)	37.0	3.8	(NA)	72.6	8.3
36410 38	Subminiature lamps (T-2 or less) ----- do--	(NA)	63.3	21.3			
36410 39	All other miniature incandescent, including surgical, medical, and dental instruments ----- do--	(NA)	48.3	24.0	(NA)	177.5	50.4
	Electric discharge, except Christmas tree:						
36410 41	Germicidal, bacterial, and ozone ----- do--	(NA)	.2	1.8	(NA)	.5	2.5
36410 42	Sun lamp bulbs ----- do--	(NA)	.2	3.0	(NA)	.5	3.6
	Fluorescent, hot cathode:						
36410 43	Slimline ----- do--	(NA)	48.0	108.9	(NA)	50.5	77.4
36410 46	Circular ----- do--	(NA)	6.4	18.1	(NA)	5.4	13.7
36410 47	High output 800 milliamper or more ----- do--	(NA)	22.5	79.8	(NA)	22.1	53.4
	Other fluorescent lamps:						
36410 44	Less than 40 watts ----- do--	(NA)	44.6	73.3	(NA)	41.8	48.8
36410 45	40 watt or more ----- do--	(NA)	211.5	227.4	(NA)	180.2	131.2
	Miscellaneous electrical discharge:						
36410 51	Glow ----- do--	(NA)	72.6	8.3	(NA)	264.8	16.1
36410 52	General lighting high intensity lamps ----- do--	(NA)	13.6	180.3	(NA)	10.6	101.2
36410 53	Sodium, photo-chemical, and other miscellaneous electrical discharge ----- do--	(NA)	.2	8.9	(NA)	.2	5.4
36410 55	Christmas tree lamps, all types ----- do--	(NA)	(D)	(D)	(NA)	(D)	(D)
36410 63	Cold cathode fluorescent lamps for illumination and decoration, including custom built lamps, but excluding sign applications ----- do--	3	(X)	(*)	1	(X)	(*)
36410 00	Electric lamps, n.s.k., typically for establishments with 20 employees or more (see note) ----- do--	(NA)	(X)	411.7	(NA)	(X)	434.9
36410 02	Electric lamps, n.s.k., typically for establishments with less than 20 employees (see note) ----- do--	(NA)	(X)	37.0	(NA)	(X)	23.6
	CURRENT-CARRYING WIRING DEVICES						
3643- —	Total -----	(NA)	(X)	2 761.4	(NA)	(X)	1 824.9
36431 —	Lampholders:						
36431 00	Lampholders: As reported in the census of manufactures ----- do--	33	(X)	154.7	(NA)	(X)	(NA)
	As reported in the Current Industrial Report MA-36K, Wiring Devices and Supplies ----- do--	(NA)	(X)	147.3	(NA)	(X)	106.5
	Incandescent:						
36431 01	Nonmetallic outer shell, threaded, medium base only, key, keyless, push through and pull types (excluding outlet box type and socket interiors) ----- millions--	(NA)	41.1	14.6	(NA)	25.0	7.7
36431 02	Metal outer shell, threaded, medium base only, key, keyless, push through and pull types, excluding outlet box type and socket interiors ----- do--	(NA)	56.1	22.1	(NA)	58.0	16.4
36431 03	Outlet box, threaded medium base only, pull and keyless types ----- do--	(NA)	13.9	14.4	(NA)	20.5	12.9
36431 06	Weatherproof, threaded, medium base only ----- do--	(NA)	17.1	6.9	(NA)	9.0	3.0
36431 11	Candelabra base, all types ----- do--	(NA)	74.2	4.1	(NA)	36.0	3.5
36431 12	Mogul base, all types ----- do--	(NA)	(5)	(5)	(NA)	3.8	2.9
36431 13	Sign and fixture, medium base only ----- do--	(NA)	41.5	17.0	(NA)	69.6	19.4
36431 14	All other incandescent: medium, admedium, bayonet, intermediate, lumiline, miniature (including but not limited to pin-type, cleat, hasp, and socket interiors sold separately, all bases) ----- do--	(NA)	5101.8	526.8	(NA)	73.3	17.3
	Fluorescent:						
36431 15	Bi-pin ----- do--	(NA)	157.0	18.1	(NA)	163.6	14.5
36431 21	Slimline ----- do--	(NA)	12.8	3.2	(NA)	18.9	2.9
36431 23	Recessed double contact ----- do--	(NA)	19.0	4.7	(NA)	15.8	3.4
36431 25	All other fluorescent (including but not limited to circline, panelescent, and starter holders) ----- do--	(NA)					
36431 28	All other lampholders (including cold cathode neon, and bases for quartz lamps) ----- do--	(NA)	64.0	15.3	(NA)	3.0	2.6

See footnotes at end of table.

Table 6a. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1982 and 1977—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text]

1982 product code	Product	1982			1977							
		Number of companies with shipments of \$100,000 or more	Product shipments ¹		Number of companies with shipments of \$100,000 or more	Product shipments ¹						
			Quantity ²	Value (million dollars)		Quantity ²	Value (million dollars)					
	CURRENT-CARRYING WIRING DEVICES—Con.											
36432 — 36432 00	Convenience and power outlets: Convenience and power outlets, both general and special purpose, excluding pin and sleeve type: As reported in the census of manufactures ----- As reported in the Current Industrial Report MA-36K, Wiring Devices and Supplies -----	21 (NA) (NA) (NA)	(X) (X) (NA) (NA)	169.5 164.5 20.4 .7	(NA) (NA) (NA) (NA)	(X) (X) .8 4.4	(NA) 138.0 13.4 1.5					
36432 27 36432 28	Receptacles with ground fault interrupting capability ----- millions.. 2-pole, 2-wire (flush, all types, all amperages) ----- do..	(NA) (NA)	1.5 1.1	20.4 .7	(NA) (NA)	.8 4.4	13.4 1.5					
36432 29 36432 30	2-pole, 3-wire or more (flush): Locking, 15 amperes or less ----- do..	(NA) (NA)	.7 1.9	2.8 11.9	(NA) (NA)	.6 1.9	1.5 7.0					
36432 31 36432 32	Locking, 20 amperes or more ----- do.. Nonlocking, 15 amperes or less ----- do..	(NA) (NA)	175.7 11.9	70.3 29.2	(NA) (NA)	201.0 15.7	75.0 22.4					
36432 34 36432 35 36432 37	Nonlocking, 20 amperes or more ----- do.. Appliance and special applications (all amperages, all types) ----- do.. Dust and explosion proof ----- do.. All other types (including surface outlets) ----- do..	(NA) (NA) (NA)	20.3	29.1	(NA)	44.3	17.2					
36433 — 36433 00	Switches, for electrical circuitry: Switches for electrical circuitry (including vehicular switches): As reported in the census of manufactures ----- As reported in the Current Industrial Report MA-36K, Wiring Devices and Supplies -----	101 (NA) (NA)						(X) (X) (X)	965.5 901.4	(NA) (NA) (NA)	(X) (NA) 487.5	
36433 60 36433 63 36433 64	General use flush mounted switches, designed for mounting in switch or outlet boxes (except dimmers): A.c. (except mercury): Single pole, 15 amperes or less ----- millions.. Single pole, more than 15 amperes ----- do.. Other than single pole, all amperages ----- do..	(NA) (NA) (NA)						40.3 24.2 14.2	26.7 13.0 27.8	(NA) (NA) (NA)	68.3 18.0 22.1	29.4 8.8 22.2
36433 65 36433 66	A.c.-d.c. (except mercury): Single pole, all amperages ----- do.. Other than single pole (including but not limited to double pole 3-way, 4-way) ----- do..	(NA) (NA)	3.8 2.3	2.8 3.5	(NA) (NA)	6.4 3.7	3.3 2.8					
36433 67 36433 68	Mercury ----- do.. All other general use switches (including but not limited to surface-mounted) ----- do..	(NA) (NA)	73.3	67.5	(NA)	70.2	27.3					
36433 70 36433 71	Special purpose switches: Appliance and fixture (including pendant and canopy types and variable speed controls) ----- do.. Precision (1/8 in. gap or less) snap-acting switches (excluding limit switches) ----- do..	(NA) (NA)						146.0 133.8	161.7 165.9	(NA) (NA)	206.8 152.3	138.5 117.9
36433 72 36433 76 36433 77	Aircraft types ----- do.. Automotive types ----- do.. All other special purpose switches (including foot actuated, light sensing, and signal actuated) ----- do..	(NA) (NA) (NA)						.6 208.9 235.9	15.4 298.8 83.2	(NA) (NA) (NA)	.1 124.8 164.3	7.2 49.4 60.6
36433 93 36433 94 36433 95	Dimmers: Incandescent: Infinitely variable, 600 watts or less ----- do.. Infinitely variable, more than 600 watts ----- do.. All other types (including but not limited to portable lamps and high-low switches) ----- do..	(NA) (NA) (NA)	4.6	16.5	(NA)	6.3 (6) (6)	13.9 (6) (6)					
36434 — 36434 00	Metal contacts: Metal contacts, precious and other: As reported in the Census of Manufactures ----- As reported in the Current Industrial Report MA-36K, Wiring Devices and Supplies -----	34 (NA) (NA)						(X) (X) (X)	164.3 173.9	(X) (NA) (NA)	(X) 6.5 6.8	(NA) 118.2 6.2
36435 — 36435 00	Wire connectors for electrical circuitry: Wire connectors for electrical circuitry: As reported in the census of manufactures ----- As reported in the Current Industrial Report MA-36K, Wiring Devices and Supplies -----	83 (NA) (NA)						(X) (X) (X)	591.6 563.4	(NA) (NA) (NA)	(X) (X) (X)	(NA) 449.7
36435 82 36435 83	Pressure connectors, where pressure is applied by screw, cone, or other mechanical device ----- millions.. Compression connectors, uninsulated terminals, and splicers, tool installed ----- do..	(NA) (NA)	340.4 2 540.4	116.0 96.4	(NA) (NA)	447.7 3 371.4	97.6 82.3					
36435 84 36435 86	Preinsulated terminals and splicers, tool installed ----- do.. Banded or strip terminals and splicers, machine installed ----- do..	(NA) (NA)	1 023.5 3 808.1	91.0 48.0	(NA) (NA)	7 241.2 4 984.6	45.6 49.6					
36435 87 36435 88	Pigtail connectors (including wire nuts) ----- do.. Blade or pin type, separable terminations and splicers ----- do..	(NA) (NA)	1 548.5 4 321.2	32.0 92.4	(NA) (NA)	1 643.7 9 895.3	30.4 144.2					
36435 89	Other wire connectors, n.e.c. (including solder type) ----- do..	(NA)	2 577.4	87.5								
36436 — 36436 00	Current-carrying wiring devices, n.e.c.: Current-carrying wiring devices, n.e.c., including attachment plug caps, connector bodies, lightning arrestors, pin and sleeve convenience power outlets, etc.: As reported in the census of manufactures ----- As reported in the Current Industrial Report MA-36K, Wiring Devices and Supplies -----	90 (NA) (NA)	(X) (X) (X)	569.5 583.5	(NA) (NA) (NA)	(X) (X) (X)	(NA) 352.0					
36436 40	Attachment plug caps and flanged outlets (including motor bases) all types (including fused, fuseless, switch, and switchless): 2-pole, 2-wire, all types, general use locking and nonlocking, all amperages ----- millions.. 2-pole, 2-wire, all types, general use locking and nonlocking, all amperages ----- millions..	(NA) (NA)	174.3	21.7	(NA)	138.7	14.9					

See footnotes at end of table.

Table 6a. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1982 and 1977—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text]

1982 product code	Product	1982			1977		
		Number of companies with shipments of \$100,000 or more	Product shipments ¹		Number of companies with shipments of \$100,000 or more	Product shipments ¹	
			Quantity ²	Value (million dollars)		Quantity ²	Value (million dollars)
	CURRENT-CARRYING WIRING DEVICES—Con.						
36436 — 36436 00	Current-carrying wiring devices, n.e.c.—Con. Current-carrying wiring devices, n.e.c., including attachment plug caps, connector bodies, lightning arrestors, pin and sleeve convenience power outlets, etc.—Con. As reported in the Current Industrial Report MA-36K, Wiring Devices and Supplies —Con. Attachment plug caps and flanged outlets (including motor bases) all types (including fused, fuseless, switch, and switchless)—Con. 2-pole, 3-wire or more:						
36436 41	Locking, 15 amperes or less ----- millions--	(NA)	2.1	5.5	(NA)	2.4	3.9
36436 42	Locking, 20 amperes or more ----- do--	(NA)	2.9	15.5	(NA)	3.4	10.6
36436 43	Nonlocking, 15 amperes or less ----- do--	(NA)	13.5	23.9	(NA)	21.3	17.2
36436 44	Nonlocking, 20 amperes or more ----- do--	(NA)	1.1	4.4	(NA)	1.5	3.8
36436 46	Appliance and special application types ----- do--	(NA)	(7)	(7)	(NA)	6.6	7.8
36436 47	Dust and explosion (except pin and sleeve) ----- do--	(NA)	(7)	(7)	(NA)		
36436 48	All other types (except pin and sleeve) ----- do--	(NA)	72.1	711.5	(NA)	.4	4.5
	Connector bodies and flanged outlets, all types (including fused and fuseless):						
36436 49	2-pole, 2-wire, all types, all amperages ----- do--	(NA)	16.3	6.0	(NA)	14.7	4.4
	2-pole, 3-wire or more:						
36436 51	Locking, 15 amperes or less ----- do--	(NA)	.8	3.1	(NA)	1.0	2.2
36436 53	Locking, 20 amperes or more ----- do--	(NA)	1.5	11.9	(NA)	2.1	8.5
36436 55	Nonlocking, 15 amperes or less ----- do--	(NA)	3.6	11.5	(NA)	5.3	8.3
36436 57	Nonlocking, 20 amperes or more ----- do--	(NA)	.2	.9	(NA)	.3	1.0
36436 59	Appliance and special application types, all amperages ----- do--	(NA)	30.2	14.7	(NA)	28.3	15.6
36436 61	Dust and explosion proof (except pin and sleeve) ----- do--	(NA)	-	-	(NA)	-	-
36436 63	All other types (except pin and sleeve) ----- do--	(NA)	-	-	(NA)	-	-
	Pin and sleeve convenience and power outlets, attachment plug caps, and connector bodies:						
	Pin and sleeve, general purpose (120 volts or more, 20 amperes or more):						
36436 65	Convenience and power outlets -----	(NA)	.4	15.5	(NA)	1.9	10.6
36436 67	Attachment plug caps -----	(NA)	.7	26.8	(NA)	.5	9.7
36436 69	Connector bodies -----	(NA)			(NA)	.1	2.3
	Pin and sleeve, dust and explosion proof (120 volts or more, 20 amperes or more):						
36436 71	Convenience and power outlets ----- millions--	(NA)			(NA)	-	-
36436 73	Attachment plug caps ----- do--	(NA)			(NA)		
36436 75	Connector bodies ----- do--	(NA)	.4	18.1	(NA)		
36436 77	Pin and sleeve, less than 120 volts, less than 20 amperes, all types, except electronic ----- do--	(NA)			(NA)		
36436 79	Fluorescent starters ----- do--	(NA)	13.8	4.5	(NA)	16.6	3.9
36436 81	Terminal blocks ----- do--	(NA)	175.0	77.7	(NA)	158.0	54.8
36436 83	Lightning arresters for alternating current power transmission systems and substations; U.S. designation, station and intermediate, I.E.C. designation 10KA and 5KA series A -----	(NA)	(X)	41.6	(NA)	(X)	30.6
36436 85	Lightning arresters for alternating current power distribution systems and substations; U.S. designation, distribution and secondary, I.E.C. designation 5KA series B, 2.5KA and 1.5KA -----	(NA)	(X)	42.0	(NA)	(X)	27.2
36436 87	Choke coils and all other protective devices -----	(NA)	(X)	17.3	(NA)	(X)	11.5
36436 89	Rail bonds for both propulsion and signal circuits -----	(NA)	(X)	12.9	(NA)	(X)	4.0
36436 91	Lightning rods -----	(NA)			(NA)		
36436 92	Overhead trolley line material (except pole and transmission line construction materials and expansion plugs for roof bolting in mines) -----	(NA)	(X)	15.9	(NA)	(X)	12.4
36436 98	All other wiring devices with integral ground fault circuit interrupting capabilities -----	(NA)	(X)	27.6	(NA)	(X)	72.2
36436 99	Miscellaneous (including but not limited to combination devices, adaptors, current taps, surface extensions, and rosettes) -----	(NA)	(X)	153.3	(NA)		
36430 00	Current-carrying wiring devices, n.s.k., typically for establishments with 20 employees or more (see note) -----	(NA)	(X)	100.2	(NA)	(X)	(NA)
36430 02	Current-carrying wiring devices, n.s.k., typically for establishments with less than 20 employees (see note) -----	(NA)	(X)	46.1	(NA)	(X)	37.3
	NONCURRENT-CARRYING WIRING DEVICES						
3644- — 36441 — 36441 00	Total -----	(NA)	(X)	2 082.3	(NA)	(X)	1 315.5
	Pole and transmission line hardware:						
	Pole and transmission line hardware:						
	As reported in the census of manufactures -----	37	(X)	415.5	32	(X)	276.2
	As reported in the Current Industrial Report MA-36K, Wiring Devices and Supplies -----	(NA)	(X)	392.7	(NA)	(X)	274.2
36441 12	Pole and transmission line construction materials, also known as overhead and underground line hardware for electric transmission, distribution, and communication lines -----	(NA)	(X)	322.5	(NA)	(X)	205.1
36441 13	Pole and transmission line anchors -----	(NA)	(X)	15.4	(NA)		
36441 14	Pole and transmission line construction materials manufactured to specification, where such materials are not otherwise commercially available -----	(NA)	(X)	39.0	(NA)	(X)	48.9
36441 51	Suspension hardware for high voltage insulators (including clamps and fittings, strain yokes, and fittings) -----	(NA)	(X)	15.7	(NA)	(X)	20.5

See footnotes at end of table.

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1982 product code	Product	1982			1977		
		Number of companies with shipments of \$100,000 or more	Product shipments ¹		Number of companies with shipments of \$100,000 or more	Product shipments ¹	
			Quantity ²	Value (million dollars)		Quantity ²	Value (million dollars)
	RESIDENTIAL LIGHTING FIXTURES—Con.						
36451 —	Residential type electric lighting fixtures, except portable— Con.						
36451 00	Residential type electric lighting fixtures, except portable, including parts and accessories—Con. As reported in the Current Industrial Report MA-36L, Electric Lighting Fixtures —Con. Incandescent (excluding portable lamps, PAR lampholders, and floodlights):						
36451 11	Ceiling or pendant millions..	(NA)	'18.1	251.2	(NA)	28.5	292.4
36451 13	Wall or bracket do..	(NA)	'4.6	'49.8	(NA)	7.1	52.0
36451 15	Designed for attachment to house do..	(NA)	4.7	48.1	(NA)	7.7	61.2
36451 17	Not designed for attachment to house (garden, patio, yard) do..	(NA)	1.5	'36.7	(NA)	1.5	18.1
36451 61	Fluorescent (except portable) do..	(NA)	'3.8	'64.3	(NA)	4.3	45.4
36451 69	Components and renewal parts for residential type sold separately do..	(NA)	(X)	'13.9	(NA)	(X)	5.1
36457 —	Portable residential type lighting fixtures and parts and accessories for residential lighting fixtures do..	(NA)	(X)	628.9	(NA)	(X)	389.6
	Incandescent portable lamps, complete:						
	Complete with shade:						
36457 21	Floor lamps do..	54	(X)	71.5	53	(X)	48.3
36457 22	Wall lamps, including adjustable types do..	35	(X)	36.3	43	(X)	25.5
36457 23	Table lamps do..	117	(X)	332.1	85	(X)	189.2
36457 29	Other, including boudoir do..	37	(X)	50.8	50	(X)	48.4
36457 32	Lamps sold without shades, including floor, table, etc. do..	9	(X)	11.6	17	(X)	11.9
36457 61	Fluorescent portable lamps, complete do..	13	(X)	29.2	16	(X)	16.7
36457 73	Parts and accessories for portable residential lighting fixtures do..	16	(X)	48.8	16	(X)	18.0
36457 00	Portable residential type lighting fixtures and parts and accessories for residential lighting fixtures, n.s.k. do..	(NA)	(X)	48.6	(NA)	(X)	31.6
36450 00	Residential lighting fixtures, n.s.k., typically for establishments with 5 employees or more (see note) do..	(NA)	(X)	164.4	(NA)	(X)	91.6
36450 02	Residential lighting fixtures, n.s.k., typically for establishments with less than 5 employees (see note) do..	(NA)	(X)	26.6	(NA)	(X)	32.4
	COMMERCIAL LIGHTING FIXTURES						
3646—	Total do..	(NA)	(X)	1 720.8	(NA)	(X)	935.0
36462 —	Commercial and institutional type electric lighting fixtures, including parts and accessories:						
36462 00	Commercial and institutional type electric lighting fixtures, including parts and accessories:						
	As reported in the census of manufactures do..	159	(X)	1 279.2	129	(X)	653.6
	As reported in the Current Industrial Report MA-36L, Electric Lighting Fixtures do..	(NA)	(X)	1 253.9	(NA)	(X)	646.1
	Incandescent fixtures:						
	Utilitarian and ornamental types, except portable (primarily for public buildings, banks, stores, office buildings, schools, auditoriums, churches, theaters, etc.):						
36462 11	Surface or pendant thousands..	(NA)	'2 130.0	43.8	(NA)	2 286.0	36.5
36462 15	Recessed do..	(NA)	'1 030.0	130.8	(NA)	1 153.0	83.5
36462 18	Specialized custom lighting fixtures, chandeliers, church lighting, etc., (except portable) do..	(NA)	(X)	'21.4	(NA)	(X)	11.1
36462 19	Other incandescent fixtures, such as interior display, portable lamps, and PAR lamp holders do..	(NA)	(X)	'70.7	(NA)	(X)	40.4
	Mercury and other high intensity discharge types:						
36462 32	Open reflector, 175 watts or less thousands..	(NA)	131.0	'15.5	(NA)	67.0	4.3
36462 33	Open reflector, 176 watts or more do..	(NA)	114.0	24.6	(NA)	89.0	6.5
36462 34	Shielded, 175 watts or less do..	(NA)	339.0	'25.6	(NA)	82.0	5.8
36462 35	Shielded, 176 watts or more do..	(NA)	103.0	'14.9	(NA)	118.0	9.6
	Fluorescent (except portable):						
36462 51	Recessed air handling (including heat extraction versions) do..	(NA)	'2 225.0	123.1	(NA)	1 296.0	43.4
36462 53	Recessed nonair handling (including heat extraction versions) do..	(NA)	8 436.0	282.6	(NA)	7 040.0	152.2
36462 54	Striplights do..	(NA)	'8 497.0	134.3	(NA)	7 389.0	86.2
36462 55	Ceiling systems (including luminous ceilings) do..	(NA)	(X)	20.4	(NA)	(X)	12.5
36462 56	Plastics wraparound thousands..	(NA)	'5 045.0	'118.4	(NA)	3 835.0	70.5
36462 57	Wall mounted fixtures do..	(NA)	'715.0	'29.7	(NA)	426.0	12.2
36462 58	Surface and pendant, louvered and lens type do..	(NA)	'1 696.0	52.4	(NA)	1 112.0	29.6
36462 59	Enclosed and gasketed do..	(NA)	'257.0	'12.8	(NA)	204.0	9.7
36462 61	Indoors signs (including electro-luminescence, exit, directional, etc.) do..	(NA)	'568.0	'24.1	(NA)	626.0	11.3
36462 62	Indoor emergency lighting (automatic self-powered) do..	(NA)	'458.0	'39.8	(NA)	55.0	4.0
36462 60	All other (including indirect) do..	(NA)	(X)	'45.3	(NA)	(X)	12.0
36462 69	Components and renewal parts for commercial and industrial type sold separately do..	(NA)	(X)	'23.7	(NA)	(X)	4.7

See footnotes at end of table.

Table 6a. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1982 and 1977—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text]

1982 product code	Product	1982			1977		
		Number of companies with shipments of \$100,000 or more	Product shipments ¹		Number of companies with shipments of \$100,000 or more	Product shipments ¹	
			Quantity ²	Value (million dollars)		Quantity ²	Value (million dollars)
	COMMERCIAL LIGHTING FIXTURES—Con.						
36463 —	Industrial type electric lighting fixtures, including parts and accessories:						
36463 00	Industrial type electric lighting fixtures, including parts and accessories:						
	As reported in the census of manufactures	82	(X)	361.8	74	(X)	243.0
	As reported in the Current Industrial Report MA-36L, Electric Lighting Fixtures	(NA)	(X)	366.9	(NA)	(X)	243.4
36463 11	General lighting (except portable):						
36463 13	Incandescent	(NA)	993.0	23.3	(NA)	1 271.0	13.9
	Fluorescent	(NA)	'5 000.0	'105.8	(NA)	5 176.0	96.7
	Mercury and other high intensity discharge types (including integrally mounted and remote ballasts):						
36463 15	Open reflector, 175 watts or less	(NA)	'52.0	'4.5	(NA)	39.0	2.4
36463 14	Open reflector, 176 watts or more	(NA)	'741.0	'66.6	(NA)	569.0	35.2
36463 20	Shielded, 175 watts or less	(NA)	'133.0	'13.0	(NA)	38.0	3.5
36463 21	Shielded, 176 watts or more	(NA)	'215.0	'34.5	(NA)	151.0	19.3
	Other industrial types such as explosion-proof, vapor-proof, dust-tight, etc. (including enclosed and gasketed):						
36463 16	Incandescent (including portable)	(NA)	1 468.0	29.7	(NA)	1 551.0	19.5
36463 17	Fluorescent (including portable)	(NA)	'501.0	33.0	(NA)	431.0	19.0
36463 19	Mercury and other high intensity discharge types (including integrally mounted and remote ballasts)	(NA)	'627.0	'47.8	(NA)	561.0	29.5
36463 29	Components and renewal parts for industrial type sold separately	(NA)	(X)	'8.9	(NA)	(X)	4.4
36460 00	Commercial, industrial, and institutional lighting fixtures, n.s.k., typically for establishments with 20 employees or more (see note)	(NA)	(X)	58.6	(NA)	(X)	14.5
36460 02	Commercial, industrial, and institutional lighting fixtures, n.s.k., typically for establishments with less than 20 employees (see note)	(NA)	(X)	21.2	(NA)	(X)	23.9
	VEHICULAR LIGHTING EQUIPMENT						
3647- —	Total	(NA)	(X)	668.3	(NA)	(X)	646.1
36470 —	Vehicular lighting equipment (including parts and accessories):						
36470 00	Vehicular lighting equipment, electric, including parts and accessories:						
	As reported in the census of manufactures	74	(X)	660.5	57	(X)	641.8
	As reported in the Current Industrial Report MA-36L, Electric Lighting Fixtures	(NA)	(X)	654.7	(NA)	(X)	622.0
	Motor vehicle incandescent lighting equipment:						
36470 01	Spot, fog auxiliary equipment (excluding bulbs):						
36470 03	Shipments for domestic replacement	(NA)	(X)	37.8	(NA)	(X)	27.2
36470 05	Shipments to U.S. motor vehicle manufacturers for use in original equipment	(NA)	(X)	'23.6	(NA)	(X)	24.6
	Shipments for export	(NA)	(X)	'4.5	(NA)	(X)	1.9
	Other motor vehicle lighting equipment (excluding bulbs, including parking light, dome light, and taillight fixtures):						
36470 22	Shipments for domestic replacement	(NA)	(X)	'81.4	(NA)	(X)	81.6
36470 23	Shipments to U.S. motor vehicle manufacturers for use in original equipment	(NA)	(X)	'308.6	(NA)	(X)	416.9
36470 24	Shipments for export	(NA)	(X)	'35.1	(NA)	(X)	
36470 29	Other than motor vehicle lighting equipment (including fluorescent fixtures, such as aircraft, watercraft, railway locomotive, railroad car, streetcar, etc.)	(NA)	(X)	'138.6	(NA)	(X)	59.7
36470 39	Components and renewal parts for vehicular lighting sold separately	(NA)	(X)	25.1	(NA)	(X)	10.2
36470 02	Vehicular lighting equipment, n.s.k., typically for establishments with less than 10 employees (see note)	(NA)	(X)	7.8	(NA)	(X)	4.3
	LIGHTING EQUIPMENT, N.E.C.						
3648- —	Total	(NA)	(X)	1 170.3	(NA)	(X)	674.7
36485 —	Outdoor lighting equipment:						
36485 00	Outdoor lighting equipment including parts and accessories:						
	As reported in the census of manufactures	84	(X)	706.5	85	(X)	392.0
	As reported in the Current Industrial Report MA-36L, Electric Lighting Fixtures	(NA)	(X)	673.1	(NA)	(X)	366.9
	Street and highway lighting luminaries (including bridge and tunnel lighting):						
36485 11	Incandescent (filament and quartz iodine)	(NA)	14.0	.3	(NA)	43.0	1.2
	Mercury and other high intensity discharge types (including integrally mounted and remote ballasts):						
36485 13	Open	(NA)	(D)	(D)	(NA)	798.0	19.7
36485 14	Enclosed	(NA)	1 077.0	93.9	(NA)	709.0	46.7
36485 15	Fluorescent	(NA)	12.0	3.7	(NA)	33.0	2.4
36485 16	Special purpose luminaries for highmast or tower lighting (exclude value of poles)	(NA)	(D)	(D)	(NA)	5.0	.8

See footnotes at end of table.

Table 6a. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1982 and 1977—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text]

1982 product code	Product	1982			1977		
		Number of companies with shipments of \$100,000 or more	Product shipments ¹		Number of companies with shipments of \$100,000 or more	Product shipments ¹	
			Quantity ²	Value (million dollars)		Quantity ²	Value (million dollars)
	LIGHTING EQUIPMENT, N.E.C.—Con.						
36485 — 36485 00	Outdoor lighting equipment—Con. Outdoor lighting equipment including parts and accessories —Con. As reported in the Current Industrial Report MA-36L, Electric Lighting Fixtures —Con. Floodlighting, area, sports, and site lighting luminaries: General purpose floodlighting:						
36485 20	Incandescent filament	(NA)	79.0	4.4	(NA)	113.0	3.9
36485 22	Incandescent quartz iodine	(NA)	712.0	16.0	(NA)	498.0	8.6
36485 24	Mercury and other high intensity discharge types (including integrally mounted and remote ballasts)	(NA)	746.0	116.2	(NA)	627.0	72.2
36485 26	Fluorescent	(NA)	29.0	2.9	(NA)	57.0	4.8
36485 28	Special purpose lighting (including sign lighting, service station island lighting, and underwater fountain and pool lighting)	(NA)	209.0	16.7	(NA)	122.0	6.4
36485 29	Area and site lighting:						
36485 30	Site lighting, less than 20 foot mounting	(NA)	714.0	56.4	(NA)	181.0	17.4
36485 32	Large area lighting 20 to 60 foot mounting	(NA)	222.0	52.7	(NA)	155.0	20.9
36485 34	Building mounted (such as high intensity discharge, incandescent, and quartz)	(NA)	660.0	38.0	(NA)	143.0	12.2
36485 31	Outdoor PAR lampholders	(NA)	3 212.0	26.9	(NA)	2 897.0	10.5
36485 33	Aviation ground lighting equipment (for fixed-based airports):						
36485 33	Runway approach lighting (including fixtures, regulators, insulating transformers, isolating lamp transformers, beacons, wind tees, and cones)	(NA)	(X)	9.8	(NA)	(X)	3.4
36485 33	Runway, (except runway approach), taxiway, and ramp lighting (including fixtures, regulators, and isolating lamp transformers)	(NA)	(X)	(D)	(NA)	(X)	(D)
36485 36	Poles, standards, newels, brackets, and accessories: For street and highway lighting (including traffic signal standards):						
36485 36	Steel poles with brackets	(NA)	(X)	37.1	(NA)	(X)	17.2
36485 38	Aluminum poles with brackets	(NA)	(X)	20.9	(NA)	(X)	16.8
36485 40	Concrete poles with brackets	(NA)	(X)	7.2	(NA)	(X)	(D)
36485 37	Brackets for wood poles	(NA)	(X)	2.9	(NA)	(X)	2.2
36485 46	For area lighting, sports, and other off-street use:						
36485 47	Steel poles with brackets (60 foot or more)	(NA)	(X)	8.6	(NA)	(X)	4.1
36485 48	Steel poles with brackets (less than 60 foot)	(NA)	(X)	27.2	(NA)	(X)	14.8
36485 49	Aluminum poles with brackets	(NA)	(X)	17.0	(NA)	(X)	10.6
36485 49	Concrete and other nonwood poles with brackets	(NA)	(X)	(D)	(NA)	(X)	(D)
36485 43	Other floodlighting and area lighting equipment: Spotlights (including indoor and stage; excluding vehicular)	(NA)	25.3	21.5	(NA)	24.7	12.8
36485 45	All other outdoor lighting equipment	(NA)	(X)	28.5	(NA)	(X)	28.2
36485 98	Components and renewal parts for outdoor lighting sold separately	(NA)	(X)	24.3	(NA)	(X)	14.6
36489 —	Electric and nonelectric lighting equipment, n.e.c., including hand portable equipment and parts and accessories	(NA)	(X)	383.0	(NA)	(X)	222.4
36489 11	Incandescent hand portable lighting equipment, except parts:						
36489 11	Flashlights and flashlight lanterns (one to five cells)	21	(X)	127.2	18	(X)	74.0
36489 19	Other, such as miners' lights, emergency warning lights, generator flashlights, etc.	11	(X)	37.1	12	(X)	26.5
36489 91	Ultra-violet and infrared health lamp fixtures, excluding lamp bulbs sold separately	5	(X)	8.7	5	(X)	(⁸)
36489 31	Other incandescent electric lighting equipment, including marine markers or beacons, railway and other vehicular route lighting equipment, etc., except parts and accessories	15	(X)	40.7	23	(X)	37.6
36489 75	Other fluorescent lighting equipment, complete units, including processing and technical equipment	19	(X)	23.6	8	(X)	8.4
36489 21	Other electric lighting equipment, including electrical discharge, such as mercury vapor (other than street and highway lighting equipment, sodium vapor, etc., excluding sign)	14	(X)	19.8	10	(X)	11.0
36489 70	Parts and accessories for other electric lighting fixtures, n.e.c.	11	(X)	17.1	6	(X)	8.4
36489 83	Nonelectric lighting equipment, including parts:						
36489 83	Lamps and lanterns, including kerosene, gasoline, propane, butane, etc.	9	(X)	45.5	6	(X)	(⁸)
36489 87	Other nonelectric lighting fixtures and equipment, complete units, including carbide lamps of all types	6	(X)	9.0	5	(X)	⁸ 38.2
36489 85	Parts and accessories for nonelectric lighting equipment, including reflectors and fittings, incandescent mantles, etc.	6	(X)	13.7	6	(X)	6.3
36489 00	Electric and nonelectric lighting equipment, n.e.c., including hand portable equipment and parts and accessories, n.s.k.	(NA)	(X)	40.8	(NA)	(X)	12.1
36480 00	Lighting equipment, n.e.c., n.s.k., typically for establishments with 5 employees or more (see note)	(NA)	(X)	51.2	(NA)	(X)	42.9
36480 02	Lighting equipment, n.e.c., n.s.k., typically for establishments with less than 5 employees (see note)	(NA)	(X)	29.6	(NA)	(X)	17.4

See footnotes at end of table.

Table 6a. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1982 and 1977—Con.

Note: In 1982 Census of Manufactures, data for establishments of small single-unit companies with up to 20 employees were estimated from administrative-record data rather than data actually collected from respondents. Employment cutoff used for administrative records for each industry and shipments figures are included in code ending with "002". In both 1982 and 1977 Censuses of Manufactures, products not completely identified on standard forms were coded in appropriate product class (five-digit) followed by "00" or to appropriate product group code (four-digit) followed by "000".

¹Data reported by all producers, not just those with shipments of \$100,000 or more.

²For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: * 10 to 19 percent estimated; ** 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by (S).

³Excludes Christmas tree lamps.

⁴For 1982 and 1977, data for product codes 36410 63 and 36410 00 were combined to avoid disclosing data for individual companies.

⁵For 1982, product codes 36431 12 and 36431 14 are combined to avoid disclosing data for individual companies.

⁶For 1977, product codes 36433 94 and 36433 95 were combined to avoid disclosing data for individual companies.

⁷For 1982, product codes 36436 46, 36436 47, and 36436 48 are combined to avoid disclosing data for individual companies.

⁸For 1977, data for product codes 36489 91, 36489 83, and 36489 87 were combined to avoid disclosing data for individual companies.

Table 6b. Product Classes—Value of Shipments by All Producers for Specified States: 1982 and 1977

[Million dollars. Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in table 2. Also, product classes are not shown if they are miscellaneous or "not specified by type" classes. Statistics for some States are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1982. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Product class and geographic area	1982 value of product shipments	1977 value of product shipments	Product class and geographic area	1982 value of product shipments	1977 value of product shipments
36431, LAMPHOLDERS			36441, POLE AND TRANSMISSION LINE HARDWARE		
United States	154.7	(NA)	United States	415.5	276.2
New York	52.1	(NA)	Alabama	46.5	17.5
36432, CONVENIENCE AND POWER OUTLETS			California	14.6	21.9
United States	169.5	(NA)	Ohio	15.7	(NA)
Connecticut	57.2	(NA)	Pennsylvania	46.4	29.3
Illinois	3.0	(NA)	36442, ELECTRICAL CONDUIT AND CONDUIT FITTINGS		
New York	65.8	(NA)	United States	1 021.3	634.4
36433, SWITCHES FOR ELECTRICAL CIRCUITRY			California	105.5	50.9
United States	965.5	(NA)	Connecticut	84.9	46.7
California	21.7	(NA)	Illinois	191.1	95.6
Connecticut	55.5	(NA)	New York	132.2	92.1
Illinois	258.0	(NA)	Ohio	41.2	48.5
Indiana	92.9	(NA)	Pennsylvania	112.0	90.8
Massachusetts	61.7	(NA)	Texas	41.5	(NA)
Michigan	55.6	(NA)	36443, NONCURRENT-CARRYING WIRING DEVICES, N.E.C.		
New Jersey	28.0	(NA)	United States	574.6	342.7
New York	64.4	(NA)	California	44.7	(NA)
Ohio	75.1	(NA)	Connecticut	6.8	(NA)
Pennsylvania	53.9	(NA)	Illinois	105.7	81.9
36434, METAL CONTACTS			New York	73.8	34.6
United States	164.3	(NA)	Ohio	30.4	20.5
Illinois	51.7	(NA)	Pennsylvania	40.6	20.2
Pennsylvania	43.3	(NA)	36451, RESIDENTIAL LIGHTING FIXTURES, EXCEPT PORTABLE		
36435, WIRE CONNECTORS FOR ELECTRICAL CIRCUITRY			United States	469.8	461.0
United States	591.6	(NA)	California	96.6	101.5
California	9.8	(NA)	Connecticut	3.4	(NA)
Connecticut	23.9	(NA)	Georgia	20.0	12.5
Florida	31.2	(NA)	Illinois	9.4	31.2
Illinois	89.5	(NA)	New Jersey	25.7	33.7
Michigan	10.5	(NA)	New York	44.4	41.9
New Jersey	20.8	(NA)	Ohio	47.9	41.0
New York	21.1	(NA)	Pennsylvania	67.1	82.6
Ohio	35.6	(NA)	Texas	41.8	14.1
Texas	2.3	(NA)	36457, PORTABLE RESIDENTIAL TYPE LIGHTING FIXTURES		
36436, CURRENT-CARRYING WIRING DEVICES, N.E.C.			United States	628.9	389.6
United States	569.5	(NA)	Arkansas	11.0	4.9
Arkansas	12.8	(NA)	California	71.9	43.5
California	29.5	(NA)	Connecticut	18.4	15.1
Connecticut	74.5	(NA)	Florida	18.6	7.6
Maryland	8.2	(NA)	Illinois	79.9	64.9
Massachusetts	61.9	(NA)	Massachusetts	14.2	(NA)
Michigan	6.0	(NA)	New Jersey	90.6	50.4
Missouri	24.4	(NA)	New York	173.2	88.0
New Jersey	36.5	(NA)	North Carolina	11.9	(NA)
New York	100.1	(NA)	Ohio	19.2	14.6
Ohio	61.3	(NA)	Pennsylvania	78.4	48.5
Pennsylvania	16.8	(NA)			

See footnotes at end of table.

Table 6b. Product Classes—Value of Shipments by All Producers for Specified States: 1982 and 1977—Con.

[Million dollars. Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in table 2. Also, product classes are not shown if they are miscellaneous or "not specified by type" classes. Statistics for some States are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1982. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Product class and geographic area	1982 value of product shipments	1977 value of product shipments	Product class and geographic area	1982 value of product shipments	1977 value of product shipments
36462, COMMERCIAL AND INSTITUTIONAL LIGHTING FIXTURES			36463, INDUSTRIAL TYPE LIGHTING FIXTURES—Con.		
United States	1 279.2	653.6	New York	32.0	(NA)
California	174.0	74.0	Ohio	37.1	25.4
Connecticut	25.9	(NA)	Pennsylvania	37.5	27.7
Florida	5.7	(NA)	Texas	32.2	10.8
Illinois	130.6	66.7			
Massachusetts	78.5	19.2	36485, OUTDOOR LIGHTING EQUIPMENT		
Michigan	27.3	(NA)	United States	706.5	392.0
Missouri	24.3	12.7	California	91.9	46.8
New Jersey	79.2	44.8	Illinois	53.2	29.3
New York	76.1	49.8	Missouri	7.0	(NA)
Ohio	44.4	27.2	New Jersey	39.4	26.7
Pennsylvania	99.4	71.3	New York	33.7	17.6
Tennessee	47.5	(NA)	Ohio	59.5	52.6
Texas	19.4	14.2	Pennsylvania	12.7	6.3
Wisconsin	11.9	2.8	Texas	35.6	22.0
36463, INDUSTRIAL TYPE LIGHTING FIXTURES			36489, LIGHTING EQUIPMENT, N.E.C.		
United States	361.8	243.0	United States	383.0	222.4
California	24.8	12.3	California	33.3	23.4
Illinois	18.4	7.3	Colorado	2.8	(NA)
Massachusetts	6.4	6.3	Connecticut	34.8	(EE)
Missouri	8.9	9.9	Illinois	38.0	23.0
New Jersey	13.2	19.9	Massachusetts	20.0	40.0
			New Hampshire	13.9	(NA)
			New York	39.2	12.7
			North Carolina	26.8	(NA)
			Ohio	26.4	9.3
			Pennsylvania	10.1	(NA)

Note: For 1977, the following value ranges (in million dollars) substitute for actual figures withheld to avoid disclosing data for individual companies: AA—less than \$2.0 but not 0; BB—\$2.0 to \$4.9; CC—\$5.0 to \$9.9; EE—\$10.0 to \$19.9; FF—\$20.0 to \$49.9; GG—\$50.0 or more.

Table 6c. Product Classes—Value Shipped by All Producers: 1982 and Earlier Years

[Million dollars. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

1982 product code	Product class	1982	1981 ¹	1980 ¹	1979 ¹	1978 ¹	1977	1972	1967
36410	Electric lamps (bulbs only)	2 025.9	2 041.9	2 050.3	2 143.0	1 894.2	1 630.2	1 069.1	756.4
3643-	Current-carrying wiring devices	2 761.4	2 858.5	2 703.9	2 561.3	2 023.9	1 824.9	1 206.8	789.8
36431	Lampholders	154.7							
36432	Convenience and power outlets	169.5							
36433	Switches for electrical circuitry	965.5							
36434	Metal contacts	164.3	2 858.5	2 703.9	2 561.3	2 023.9	1 824.9	1 206.8	789.8
36435	Wire connectors for electrical circuitry	591.6							
36436	Current-carrying wiring devices, n.e.c.	569.5							
36430	Current-carrying wiring devices, n.s.k.	146.3							
3644-	Noncurrent-carrying wiring devices	2 082.3	2 158.6	2 008.3	1 966.2	1 574.2	1 315.5	832.7	548.6
36441	Pole and transmission line hardware	415.5	453.5	432.8	393.5	300.0	276.2	222.3	130.2
36442	Electrical conduit and conduit fittings	1 021.3	1 057.2	993.1	1 010.8	770.8	634.4	393.7	306.9
36443	Noncurrent-carrying wiring devices, n.e.c.	574.6	620.6	547.9	503.9	412.0	342.7	195.9	98.6
36440	Noncurrent-carrying wiring devices, n.s.k.	70.9	27.3	34.5	58.0	91.4	62.2	20.8	12.8
3645-	Residential lighting fixtures	1 289.7	1 245.5	1 202.4	1 170.9	1 107.0	974.6	746.1	457.8
36451	Residential lighting fixtures, except portable	469.8	506.8	523.0	559.8	528.5	461.0	291.9	190.5
36457	Portable residential type lighting fixtures	628.9	643.6	586.0	513.7	454.0	389.6	320.9	176.3
36450	Residential lighting fixtures, n.s.k.	191.0	95.1	93.4	97.3	124.5	124.0	133.3	91.0
3646-	Commercial lighting fixtures	1 720.8	1 676.7	1 460.1	1 322.4	1 068.4	935.0	701.8	(NA)
36462	Commercial and institutional lighting fixtures	1 279.2	1 162.7	1 027.9	954.2	745.4	653.6	527.2	385.4
36463	Industrial type lighting fixtures	361.8	480.1	405.0	336.8	279.1	243.0	162.6	120.6
36460	Commercial lighting fixtures, n.s.k.	79.8	33.9	27.2	31.4	43.9	38.4	12.0	(NA)
36470	Vehicular lighting equipment	668.3	605.6	590.9	655.8	727.8	646.1	358.1	226.1
3648-	Lighting equipment, n.e.c.	1 170.3	1 100.4	990.7	888.2	797.1	674.7	488.0	(NA)
36485	Outdoor lighting equipment	706.5	707.5	643.6	545.4	457.5	392.0	316.5	199.2
36489	Lighting equipment, n.e.c.	383.0	328.6	284.3	280.7	281.3	222.4	164.7	122.6
36480	Lighting equipment, n.e.c., n.s.k.	80.8	64.3	62.8	62.1	58.3	60.3	6.8	(NA)

¹Figures are estimates derived from a representative sample of manufacturing establishments canvassed in annual survey of manufactures and, therefore, may differ from results that would be obtained from a complete canvass of all manufacturing establishments. Standard errors associated with estimates are published in annual survey of manufactures volumes for this period.

Table 7. Materials Consumed by Kind: 1982 and 1977

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendix. For meaning of abbreviations and symbols, see introductory text]

1982 material code	Material	1982		1977	
		Quantity ¹	Delivered cost (million dollars)	Quantity ¹	Delivered cost (million dollars)
	INDUSTRY 3641, ELECTRIC LAMPS				
	Materials, parts, containers, and supplies -----	(X)	718.0	(X)	539.3
260091	Paper and paperboard containers, including shipping sacks and other paper packaging supplies -----	(X)	56.3	(X)	49.0
281901	Industrial inorganic chemicals -----	(X)	27.4	(X)	33.0
282104	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc., but excluding sheets, rods, tubes, and other shapes ----- mil lb.	(D)	(³)	(X)	(⁴)
307903	Plastics products consumed in the form of sheets, rods, tubes, and other shapes -----	(X)	(³)	(X)	(⁴)
320313	Glass and glass products, including lamp bulb blanks -----	(X)	263.1	(X)	179.6
335005	Nonferrous metal wire -----	(X)	77.4	(X)	85.7
335105	Copper and copper-base alloy mill shapes and forms ----- mil lb.	(D)	(³)	**27.9	7.6
369941	Electric lamp (bulb) bases -----	(X)	70.0	(X)	(⁴)
970099	All other materials and components, parts, containers, and supplies -----	(X)	³ 207.2	(X)	⁴ 166.5
971000	Materials, parts, containers, and supplies, n.s.k. ² -----	(X)	16.6	(X)	17.9
	INDUSTRY 3643, CURRENT-CARRYING WIRING DEVICES				
	Materials, parts, containers, and supplies -----	(X)	868.9	(X)	654.7
	Mill shapes and forms, except castings:				
	Carbon steel:				
331011	Bars and bar shapes ----- 1,000 s tons	(S)	2.1	(S)	1.3
331012	Sheet and strip -----	*24.6	16.1	30.9	13.3
331017	Wire and wire products ----- do	6.9	4.3	19.2	6.5
331066	All other carbon steel mill shapes and forms ----- do	.8	1.3	(S)	.9
331020	Alloy steel, except stainless ----- do	(S)	1.5	(S)	2.0
	Stainless steel:				
331033	Sheet and strip ----- do	(S)	5.1	(S)	2.7
331050	All other stainless steel mill shapes and forms ----- do	(S)	3.3	(S)	1.0
	Insulated wire and cable, except magnet wire:				
335792	Copper (quantity of copper content) ----- mil lb	(S)	21.5	*9.6	26.1
335793	Aluminum (quantity of aluminum content) ----- do	.2	.2	(D)	(D)
	Copper and copper-base alloy:				
335728	Bare wire (for electrical conduction only) ----- do	(S)	9.9	(S)	6.6
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes ----- do	(S)	17.2	**13.2	16.0
335143	Plate, sheet, and strip, including military cups and discs ----- do	(S)	59.9	(S)	66.8
335152	Pipe and tube ----- do	*3.0	6.4	(S)	4.2
	Aluminum and aluminum-base alloy:				
335301	Sheet, plate, and foil ----- do	(S)	4.3	6.5	6.5
335405	Extruded shapes, including extruded rod, bar, pipe, tube, etc. ----- do	(S)	8.6	8.4	8.8
335008	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.) ----- do	*3.1	5.7	1.8	2.2
335609	Nonferrous metal, except copper and aluminum -----	**1.5	3.1	(X)	4.2
	Refinery shapes:				
333122	Copper and copper-base alloy ----- 1,000 s tons	2.0	2.9	(S)	11.3
333401	Aluminum and aluminum-base alloy ----- do	8.2	4.4	(D)	(D)
333348	Zinc and zinc-base alloy ----- do				
	Scrap:				
190024	Copper and copper-base alloy ----- do	1.6	1.9	(D)	(D)
190020	Aluminum and aluminum-base alloy ----- do	(Z)	(Z)	(D)	(D)
	Castings (rough and semifinished):				
332011	Iron (gray and malleable):				
	Purchased ----- do	**3	.5	*.5	.8
	Produced and consumed ----- do	-	(X)	-	(X)
332045	Steel:				
	Purchased ----- do	(S)	.9	(X)	(⁵)
	Produced and consumed ----- do	-	(X)	(X)	(X)
336100	Aluminum and aluminum-base alloy:				
	Purchased ----- mil lb	(S)	10.9	(S)	7.1
	Produced and consumed ----- do	-	(X)	(S)	(X)
336200	Copper and copper-base alloy:				
	Purchased ----- do	(S)	5.3	**2.6	5.8
	Produced and consumed ----- do	(S)	(X)	(S)	(X)
336902	Other nonferrous:				
	Purchased ----- do	(S)	3.0	(X)	(⁵)
	Produced ----- do	-	(X)	(X)	(X)
333903	Precious metals, all forms (including ingot, sheet, strip, solder, plating, electrodes, etc.) ----- 1,000 troy oz	(S)	57.2	(X)	(⁵)
345001	Bolts, nuts, screws, rivets, washers, and screw machine products -----	(X)	41.5	(X)	24.2
346901	Metal stampings ----- 1,000 s tons	(S)	20.5	(X)	(⁵)
364300	Current-carrying wiring devices -----	(X)	42.8	(X)	15.8
367408	Semiconductors ----- mil lb	(S)	16.7	19.3	6.4
282104	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc., but excluding sheets, rods, tubes, and shapes ----- do	(S)	61.4	**70.9	41.7
307903	Plastics products consumed in the form of sheets, rods, tubes, and shapes -----	(X)	23.1	(X)	24.5
970099	All other materials and components, parts, containers, and supplies -----	(X)	283.6	(X)	⁵ 231.0
971000	Materials, parts, containers, and supplies, n.s.k. ² -----	(X)	121.8	(X)	103.2

See footnotes at end of table.

Table 7. Materials Consumed by Kind: 1982 and 1977—Con.

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendix. For meaning of abbreviations and symbols, see introductory text]

1982 material code	Material	1982		1977	
		Quantity ¹	Delivered cost (million dollars)	Quantity ¹	Delivered cost (million dollars)
	INDUSTRY 3644, NONCURRENT-CARRYING WIRING DEVICES				
	Materials, parts, containers, and supplies -----	(X)	1 005.6	(X)	598.1
	Mill shapes and forms, except castings:				
	Carbon steel:				
331011	Bars and bar shapes ----- 1,000 s tons--	92.8	46.6	53.8	19.4
331012	Sheet and strip ----- do--	333.4	132.9	490.5	153.9
331017	Wire and wire products ----- do--	(S)	14.1	(S)	5.5
331066	All other carbon steel mill shapes and forms ----- do--	100.2	47.8	150.8	62.1
331020	Alloy steel, except stainless ----- do--	(D)	(⁶)	(S)	5.0
	Stainless steel:				
331033	Sheet and strip ----- do--	*1.6	2.9	(S)	1.1
331050	All other stainless steel mill shapes and forms ----- do--	.6	.6	(S)	.4
	Insulated wire and cable, except magnet wire:				
335792	Copper (quantity of copper content) ----- mil lb--	**5.1	3.0	1.4	2.1
335793	Aluminum (quantity of aluminum content) ----- do--			(D)	(D)
	Copper and copper-base alloy:				
335728	Bare wire for electrical conduction ----- do--	(S)	16.5	(D)	(D)
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes ----- do--			*1.4	1.9
335143	Plate, sheet, and strip, including military cups and discs ----- do--			(S)	1.5
335152	Pipe and tube ----- do--			(S)	.3
	Aluminum and aluminum-base alloy:				
335301	Sheet, plate, and foil ----- do--	(S)	2.3	2.1	1.9
335405	Extruded shapes, including extruded rod, bar, pipe, tube, etc. ----- do--	**10.6	10.5	7.6	5.7
335008	All other aluminum and aluminum-base alloy mill shapes and forms (wire, rolled rod and bar, powder, and welded tubing, etc.) ----- do--	*3.0	3.0	(S)	6.6
335609	Nonferrous metal, except copper and aluminum ----- do--	3.9	2.6	(X)	(D)
	Refinery shapes:				
333122	Copper and copper-base alloy ----- 1,000 s tons--	1.0	.6	(D)	(D)
333401	Aluminum and aluminum-base alloy ----- do--	**5.8	5.7	1.8	1.1
333348	Zinc and zinc-base alloy ----- do--	10.2	6.6	5.3	4.1
	Scrap, excluding home scrap:				
190021	Copper and copper-base alloy ----- do--	-	-	(D)	(D)
190020	Aluminum and aluminum-base alloy ----- do--	(D)	(⁶)	(S)	2.6
	Castings (rough and semifinished):				
332011	Iron (gray and malleable):				
	Purchased ----- do--	*18.5	18.2	(S)	10.2
	Produced and consumed ----- do--	(Z)	(X)	(S)	(X)
332045	Steel:				
	Purchased ----- do--	(D)	(⁶)	(X)	(⁶)
	Produced and consumed ----- do--	(D)	(X)	(X)	(X)
336100	Aluminum and aluminum-base alloy:				
	Purchased ----- mil lb--	*10.2	19.3	(S)	14.6
	Produced and consumed ----- do--	1.6	(X)	(S)	(X)
336200	Copper and copper-base alloy:				
	Purchased ----- do--	(S)	.6	(D)	(D)
	Produced and consumed ----- do--	(S)	(X)	(D)	(X)
336902	Other nonferrous:				
	Purchased ----- do--	(S)	11.6	(X)	(⁶)
	Produced and consumed ----- do--	(S)	(X)	(X)	(X)
333903	Precious metals, all forms (including ingot, sheet, strip, solder, plating, electrodes, etc.) ----- 1,000 troy oz--	(S)	.3	(NA)	(⁶)
345001	Bolts, nuts, screws, rivets, washers, and screw machine products ----- 1,000 s tons--	(X)	24.1	(X)	16.6
346901	Metal stampings ----- 1,000 s tons--	(S)	2.6	(X)	(⁶)
364300	Current-carrying wiring devices ----- mil lb--	(X)	6.5	(X)	2.5
367408	Semiconductors ----- do--	(Z)	-	(D)	(D)
282104	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc, but excluding sheets, rods, tubes, and shapes ----- do--	(S)	85.7	**42.8	17.5
307903	Plastics products consumed in the form of sheets, rods, tubes, and shapes ----- do--	(X)	14.7	(X)	4.5
970099	All other materials and components, parts, containers, and supplies ----- do--	(X)	⁶ 214.6	(X)	⁵ 121.9
971000	Materials, parts, containers, and supplies, n.s.k. ² ----- do--	(X)	311.7	(X)	119.8
	INDUSTRY 3645, RESIDENTIAL LIGHTING FIXTURES				
	Materials, parts, containers, and supplies -----	(X)	586.1	(X)	445.6
	Mill shapes and forms, except castings and forgings:				
	Carbon steel:				
331011	Bars and bar shapes ----- 1,000 s tons--	(D)	(⁷)	(D)	(⁷)
331012	Sheet and strip ----- do--	(S)	11.7	**19.4	8.6
331013	Plates ----- do--	(D)	(⁷)	(D)	(⁷)
331015	Structural shapes ----- do--	(S)	3.7	(S)	3.2
331017	Wire and wire products ----- do--	(S)	3.8	(S)	2.7
331019	All other carbon steel mill shapes and forms ----- do--	(S)	76.7	(S)	76.6
331020	Alloy steel, except stainless ----- do--	(D)	(D)	(S)	1.9
	Stainless steel:				
331033	Sheet and strip ----- do--	(S)	.8	(S)	(⁸)
331050	All other stainless steel mill shapes and forms ----- do--	(S)	.3	(S)	.5
	Insulated wire and cable, except magnet wire:				
335792	Copper (quantity of copper content) ----- mil lb--	(S)	6.6	(S)	6.1
335793	Aluminum (quantity of aluminum content) ----- do--	.4	1.0	(D)	(⁹)
335770	Magnet wire ----- do--	(S)	.4	(S)	.2

See footnotes at end of table.

Table 7. **Materials Consumed by Kind: 1982 and 1977—Con.**

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendix. For meaning of abbreviations and symbols, see introductory text]

1982 material code	Material	1982		1977	
		Quantity ¹	Delivered cost (million dollars)	Quantity ¹	Delivered cost (million dollars)
	INDUSTRY 3645, RESIDENTIAL LIGHTING FIXTURES—Con.				
	Mill shapes and forms, except castings and forgings:—Con.				
	Copper and copper-base alloy:				
335728	Bare wire for electrical conduction ----- mil lb.	(S)	1.3	(D)	(¹⁰)
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes ----- do.	(S)	10.5	(S)	¹⁰ 1.1
335143	Plate, sheet, and strip, including military cups and discs ----- do.			**1.1	1.5
335152	Pipe and tubes ----- do.	(S)	4.1	**1.0	1.
	Aluminum and aluminum-base alloy:				
335301	Sheet, plate, and foil ----- do.	**5.8	6.4	(S)	2.1
335405	Extruded shapes, including extruded rod, bar, pipe, tube, etc. ----- do.	(S)	4.8	(S)	1.6
335008	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.) ----- do.	(S)	.4	(S)	.4
333401	Aluminum and aluminum-base alloy refinery shapes ----- 1,000 s tons.	(X)	(D)	(S)	.1
	Castings (rough and semifinished):				
332011	Iron (gray and malleable):				
	Purchased ----- do.	(S)	3.0	(S)	4.4
	Produced and consumed ----- do.	(S)	(X)	(S)	(X)
332045	Steel:				
	Purchased ----- do.	(S)	2.9	(S)	2.8
	Produced and consumed ----- do.	(S)	(X)	(S)	(X)
336100	Aluminum and aluminum-base alloy:				
	Purchased ----- mil lb.	(S)	5.3	**8.4	6.1
	Produced and consumed ----- do.	(S)	(X)	(S)	(X)
336200	Copper and copper-base alloy:				
	Purchased ----- do.	(S)	.8	(S)	3.2
	Produced and consumed ----- do.	-	(X)	(S)	(X)
336902	Other nonferrous:				
	Purchased ----- do.	(S)	9.1	(X)	(¹¹)
	Produced and consumed ----- do.	(S)	(X)	(X)	(X)
345001	Bolts, nuts, screws, washers, rivets, and screw machine products ----- do.	(X)	9.2	(X)	8.4
361201	Specialty transformers and fluorescent ballasts ----- do.	(X)	11.0	(X)	6.6
364101	Electric lamp bulbs ----- do.	(X)	3.9	(X)	(¹¹)
364300	Current-carrying wiring devices ----- do.	(X)	17.7	(X)	14.0
399951	Lamp shades ----- do.	(X)	18.9	(X)	(¹¹)
265001	Paperboard containers, boxes, and corrugated paperboard ----- 1,000 s tons.	(S)	20.0	(S)	19.6
282104	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc., but excluding sheets, rods, tubes, and shapes ----- mil lb.	(S)	1.6	(S)	.7
307902	Fabricated plastics products, except gaskets ----- do.	(X)	2.8	(X)	2.7
307903	Plastics products consumed in the form of sheets, rods, tubes, and other shapes ----- do.	(X)	9.4	(X)	8.6
321101	Flat glass (plate, float, and sheet) ----- mil sq ft.	(S)	6.4	(X)	(¹¹)
970099	All other materials and components, parts, containers, and supplies ----- do.	(X)	156.4	(X)	¹¹ 169.2
971000	Materials, parts, containers, and supplies, n.s.k. ² ----- do.	(X)	245.1	(X)	161.6
	INDUSTRY 3646, COMMERCIAL LIGHTING FIXTURES				
	Materials, parts, containers, and supplies ----- do.	(X)	851.1	(X)	470.6
	Mill shapes and forms, except castings and forgings:				
	Carbon steel:				
331011	Bars and bar shapes ----- 1,000 s tons.	(S)	76.0	(S)	.8
331012	Sheet and strip ----- do.			(S)	53.6
331013	Plates ----- do.	(S)	.2	(S)	.1
331015	Structural shapes ----- do.	(S)	.8	(D)	(¹²)
331017	Wire and wire products ----- do.			(S)	.1
331019	All other carbon steel mill shapes and forms ----- do.	26.7	20.6	(S)	¹² 3.6
331020	Alloy steel, except stainless ----- do.	(D)	(D)	**5.3	2.1
	Stainless steel:				
331033	Sheet and strip ----- do.	**1.2	2.8	(D)	(D)
331050	All other stainless steel mill shapes and forms ----- do.	(S)	3.4	(D)	(D)
	Insulated wire and cable, except magnet wire:				
335792	Copper (quantity of copper content) ----- mil lb.	(S)	5.8	(D)	(¹³)
335793	Aluminum (quantity of aluminum content) ----- do.			(D)	(¹³)
335770	Magnet wire ----- do.	(D)	(D)	(S)	¹³ 3.1
	Copper and copper-base alloy:				
335728	Bare wire (for electrical conduction only) ----- do.	**6	.6	(S)	.4
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes ----- do.	*.1	.1	(S)	.3
335143	Plate, sheet, and strip, including military cups and discs ----- do.	(S)	.3	(S)	.1
335152	Pipe and tube ----- do.	(S)	.3	(S)	.1
	Aluminum and aluminum-base alloy:				
335301	Sheet, plate, and foil ----- do.	**14.2	27.5	(S)	8.3
335405	Extruded shapes, including extruded rod, bar, pipe, tube, etc. ----- do.			(S)	7.0
335008	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.) ----- do.	(S)	19.3	(S)	.1
333401	Aluminum and aluminum-base alloy refinery shapes ----- 1,000 s tons.	1.6	1.0	2.1	2.0
	Castings (rough and semifinished):				
332011	Iron (gray and malleable):				
	Purchased ----- do.	**9	1.6	(S)	.8
	Produced and consumed ----- do.	-	(X)	(S)	(X)
332045	Steel:				
	Purchased ----- do.	(S)	3.5	(D)	(D)
	Produced and consumed ----- do.	-	(X)	(S)	(X)
336100	Aluminum and aluminum-base alloy:				
	Purchased ----- mil lb.	**8.8	18.8	(S)	5.0
	Produced and consumed ----- do.	.6	(X)	(S)	(X)
336200	Copper and copper-base alloy:				
	Purchased ----- do.	(D)	(D)	(D)	(D)
	Produced and consumed ----- do.	(S)	(X)	(S)	(X)

See footnotes at end of table.

Table 7. Materials Consumed by Kind: 1982 and 1977—Con.

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendix. For meaning of abbreviations and symbols, see introductory text]

1982 material code	Material	1982		1977					
		Quantity ¹	Delivered cost (million dollars)	Quantity ¹	Delivered cost (million dollars)				
	INDUSTRY 3646, COMMERCIAL LIGHTING FIXTURES—Con.								
	Castings (rough and semifinished)—Con.								
336902	Other nonferrous:								
	Purchased ----- 1,000 s tons..	(S)	.2	(X)	(¹¹)				
	Produced and consumed ----- do..	(S)	(X)	(X)	(X)				
345001	Bolts, nuts, screws, washers, rivets, and screw machine products -----	(X)	16.6	(X)	8.7				
361201	Specialty transformers and fluorescent ballasts -----	(X)	208.1	(X)	103.3				
364101	Electric lamp bulbs -----	(X)	15.6	(X)	(¹¹)				
364300	Current-carrying wiring devices -----	(X)	17.7	(X)	15.7				
399951	Lamp shades -----	(X)	(D)	(X)	(¹¹)				
265001	Paperboard boxes, containers, and corrugated paperboard -- 1,000 s tons..	(S)	24.9	(S)	17.9				
282104	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc., excluding sheets, rods, tubes, and shapes ----- mil lb..	20.1	14.7	*12.2	7.5				
307902	Fabricated plastics products, except gaskets -----	(X)	5.7	(X)	1.7				
307903	Plastics products consumed in the form of sheets, rods, tubes, and other shapes -----	(X)	32.4	(X)	25.5				
321101	Flat glass (plate, float, and sheet) ----- mil sq ft..	(S)	3.6	(X)	(¹¹)				
970099	All other materials and components, parts, containers, and supplies -----	(X)	134.9	(X)	1187.8				
971000	Materials, parts, containers, and supplies, n.s.k. ² -----	(X)	184.1	(X)	99.2				
	INDUSTRY 3647, VEHICULAR LIGHTING EQUIPMENT								
	Materials, parts, containers, and supplies -----	(X)	370.3	(X)	367.6				
	Mill shapes and forms, except castings and forgings:								
	Carbon steel:								
331011	Bars and bar shapes ----- 1,000 s tons..	(S)	23.1	44.6	29.3				
331012	Sheet and strip ----- do..								
331013	Plates ----- do..								
331015	Structural shapes ----- do..								
331017	Wire and wire products ----- do..								
331019	All other carbon steel mill shapes and forms ----- do..	3.8	6.4	3.7	7.2				
331020	Alloy steel, except stainless ----- do..								
	Stainless steel:								
331033	Sheet and strip ----- do..			.1	.2				
331050	All other stainless steel mill shapes and forms ----- do..								
	Insulated wire and cable, except magnet wire:								
335792	Copper (quantity of copper content) ----- mil lb..	(S)	4.2	(S)	4.1				
335793	Aluminum (quantity of aluminum content) ----- do..								
335770	Magnet wire ----- do..								
	Copper and copper-base alloy:								
335728	Bare wire for electrical conduction ----- do..			-	-				
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes ----- do..	**1.6	2.9						
335143	Plate, sheet, and strip, including military cups and discs ----- do..					**.6	.8		
335152	Pipe and tubes ----- do..							(D)	(D)
	Aluminum and aluminum-base alloy:								
335301	Sheet, plate, and foil ----- do..	(D)	(D)						
335405	Extruded shapes, including extruded rod, bar, pipe, tube, etc. ----- do..			(S)	.6				
335008	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.) ----- do..					(D)	(D)		
333401	Aluminum and aluminum-base alloy refinery shapes ----- 1,000 s tons..	-	-						
	Castings (rough and semifinished):								
332011	Iron (gray and malleable):								
	Purchased ----- do..	(Z)	-	(D)	(D)				
	Produced and consumed ----- do..	-	(X)	(D)	(X)				
332045	Steel:								
	Purchased ----- do..	-	-	(D)	(D)				
	Produced and consumed ----- do..	-	(X)	(D)	(X)				
336100	Aluminum and aluminum-base alloy:								
	Purchased ----- mil lb..	(S)	1.6	.8	1.2				
	Produced and consumed ----- do..	-	(X)	(S)	(X)				
336200	Copper and copper-base alloy:								
	Purchased ----- do..	(D)	(D)	(NA)	(NA)				
	Produced and consumed ----- do..	-	(X)	(NA)	(NA)				
336902	Other nonferrous:								
	Purchased ----- do..	(S)	1.3	(X)	(¹¹)				
	Produced and consumed ----- do..	(S)	(X)	(X)	(X)				
345001	Bolts, nuts, screws, washers, rivets, and screw machine products -----	(X)	11.4	(X)	11.6				
361201	Specialty transformers and fluorescent ballasts -----	(X)	.5	(X)	.5				
364101	Electric lamp bulbs -----	(X)	12.0	(X)	(¹¹)				
364300	Current-carrying wiring devices -----	(X)	10.7	(X)	7.9				
399951	Lamp shades -----	(X)	-	(X)	(¹¹)				
265001	Paperboard containers, boxes, and corrugated paperboard -- 1,000 s tons..	(S)	7.5	(S)	8.9				
282104	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc., but excluding sheets, rods, tubes, and shapes ----- mil lb..	66.9	47.6	66.0	39.7				
307902	Fabricated plastics products, except gaskets -----	(X)	11.6	(X)	4.2				
307903	Plastics products consumed in the form of sheets, rods, tubes, and other shapes -----	(X)	3.2	(X)	10.4				
321101	Flat glass (plate, float, and sheet) ----- mil sq ft..	(S)	(D)	(X)	(¹¹)				
970099	All other materials and components, parts, containers, and supplies -----	(X)	184.6	(X)	11206.4				
971000	Materials, parts, containers, and supplies, n.s.k. ² -----	(X)	38.0	(X)	19.7				

See footnotes at end of table.

Table 7. Materials Consumed by Kind: 1982 and 1977—Con.

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendix. For meaning of abbreviations and symbols, see introductory text]

1982 material code	Material	1982		1977	
		Quantity ¹	Delivered cost (million dollars)	Quantity ¹	Delivered cost (million dollars)
	INDUSTRY 3648, LIGHTING EQUIPMENT, N.E.C.				
	Materials, parts, containers, and supplies -----	(X)	413.3	(X)	300.5
	Mill shapes and forms, except castings and forgings:				
	Carbon steel:				
331011	Bars and bar shapes ----- 1,000 s tons..	(S)	1.8	(S)	.8
331012	Sheet and strip ----- do..	*25.6	12.8	(S)	9.4
331013	Plates ----- do..	*6.0	2.5	*8.8	3.9
331015	Structural shapes ----- do..	(S)	3.7	**3.4	1.9
331017	Wire and wire products ----- do..	(S)	3.1	(S)	1.1
331019	All other carbon steel mill shapes and forms ----- do..	(S)	3.1	(S)	1.1
331020	Alloy steel, except stainless ----- do..	**4.2	8.2	**7.6	4.9
	Stainless steel:				
331033	Sheet and strip ----- do..	(S)	2.3	(S)	2.1
331050	All other stainless steel mill shapes and forms ----- do..	(S)	2.3	(S)	2.1
	Insulated wire and cable, except magnet wire:				
335792	Copper (quantity of copper content) ----- mil lb..	(S)	2.4	**3.3	2.9
335793	Aluminum (quantity of aluminum content) ----- do..	(D)	(D)	.3	.5
335770	Magnet wire ----- do..	*2.1	3.8	2.2	2.4
	Copper and copper-base alloy:				
335728	Bare wire for electrical conduction ----- do..	(S)	1.0	(S)	.1
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes ----- do..	(S)	1.0	(S)	.1
335143	Plate, sheet, and strip, including military cups and discs ----- do..	.6	.9	(S)	1.6
335152	Pipe and tubes ----- do..	(S)	.1	(S)	.2
	Aluminum and aluminum-base alloy:				
335301	Sheet, plate, and foil ----- do..	(S)	13.2	(S)	13.2
335405	Extruded shapes, including extruded rod, bar, pipe, tube, etc. ----- do..	(S)	18.4	(S)	17.0
335008	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.) ----- do..	*7.8	11.7	(S)	.7
333401	Aluminum and aluminum-base alloy refinery shapes ----- 1,000 s tons..	*12.5	5.1	6.5	5.4
	Castings (rough and semifinished):				
332011	Iron (gray and malleable):				
	Purchased ----- do..	(S)	3.6	*.4	.6
	Produced and consumed ----- do..	(S)	(X)	(S)	(X)
332045	Steel:				
	Purchased ----- do..	(S)	(D)	(S)	.8
	Produced and consumed ----- do..	-	(X)	(S)	(X)
336100	Aluminum and aluminum-base alloy:				
	Purchased ----- mil lb..	(S)	23.7	(S)	21.7
	Produced and consumed ----- do..	(S)	(X)	(S)	(X)
336200	Copper and copper-base alloy:				
	Purchased ----- do..	(S)	(D)	(S)	.8
	Produced and consumed ----- do..	-	(X)	(S)	(X)
336902	Other nonferrous:				
	Purchased ----- do..	(S)	1.1	(X)	(¹¹)
	Produced and consumed ----- do..	-	(X)	(X)	(X)
345001	Bolts, nuts, screws, washers, rivets, and screw machine products ----- do..	(X)	9.9	(X)	5.1
361201	Specialty transformers and fluorescent ballasts ----- do..	(X)	23.3	(X)	13.4
364101	Electric lamp bulbs ----- do..	(X)	8.5	(X)	(¹¹)
364300	Current-carrying wiring devices ----- do..	(X)	6.5	(X)	5.3
399951	Lamp shades ----- do..	(X)	(D)	(X)	(¹¹)
265001	Paperboard containers, boxes, and corrugated paperboard ----- 1,000 s tons..	(S)	10.5	(S)	8.4
282104	Plastics resins consumed in the forms of granules, pellets, powders, liquids, etc., but excluding sheets, rods, tubes, and shapes ----- mil lb..	**13.7	8.5	6.4	4.8
307902	Fabricated plastics products, except gaskets ----- do..	(X)	3.1	(X)	8.1
307903	Plastics products consumed in the form of sheets, rods, tubes, and other shapes ----- do..	(X)	11.3	(X)	4.6
321101	Flat glass (plate, float, and sheet) ----- mil sq ft..	(S)	2.5	(X)	(¹¹)
970099	All other materials and components, parts, containers, and supplies ----- do..	(X)	107.8	(X)	¹¹ 119.8
971000	Materials, parts, containers, and supplies, n.s.k. ² ----- do..	(X)	96.1	(X)	37.9

¹For some establishments, data have been estimated from central unit values which are based on quantity-cost relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: * 10 to 19 percent estimated; ** 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by (S).

²Total cost of materials of establishments that did not report detailed materials data, including establishments that were not mailed a form.

³For 1982, material codes 282104, 307903, and 335105 are combined with material code 970099 to avoid disclosing data for individual companies.

⁴For 1977, material codes 282104, 307903, and 369941 were included with material code 970099.

⁵For 1977, material codes 332045, 336902, 333903, and 346901 were included with material code 970099.

⁶For 1982, material codes 331020, 190020, 332045, and 970099 are combined to avoid disclosing data for individual companies.

⁷For 1977 and 1982, material codes 331011, 331013, and 331019 were combined to avoid disclosing data for individual companies.

⁸For 1977, material code 331033 was included with material code 331050 to avoid disclosing data for individual companies.

⁹For 1977, material code 335793 was included with material code 335770 to avoid disclosing data for individual companies.

¹⁰For 1977, material code 335728 was included with material code 335102 to avoid disclosing data for individual companies.

¹¹For 1977, material codes 336902, 364101, 399951, and 321101 were included with material code 970099.

¹²For 1977, material code 331015 was included with material code 331019 to avoid disclosing data for individual companies.

¹³For 1977, material codes 335792 and 335793 were included with material code 335770 to avoid disclosing data for individual companies.

APPENDIX A.

Explanation of Terms

This appendix is in two sections. Section 1 includes items which were requested of all establishments that were mailed census of manufactures forms including annual survey of manufactures (ASM) forms. Note that this section also includes several items (number of establishments and companies, value added, classes of products, and specialization and coverage ratios) that were not included on the report forms but were derived from information collected on the forms. Section 2 covers supplementary items that were requested only from establishments included in the ASM sample. Results of the supplementary ASM inquiries are included in tables 3c and 3d of this report.

SECTION 1. ITEMS COLLECTED OR DERIVED BASED ON ALL CENSUS OF MANUFACTURES (INCLUDING ASM) REPORT FORMS

Number of establishments and companies—As discussed in the Introduction, a separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operates at different physical locations, even if the individual locations are producing the same line of goods, a separate report was requested for each location. If the company operates in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on the number of custodial employees, capital expenditures, inventories, or any shipments from inventories during the portion of the year the plant was in operation.

In this report, data are shown for establishments in operation at any time during the year. A comparison with the number of establishments in operation at the end of the year will be provided in the Introduction to Part 1 of the General Summary subject report.

Employment and related items—The regular report forms requested separate information on production workers as of a payroll period for each quarter of the year and on other employees as of the payroll period which included the 12th of March.

All employees—This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period ending nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production workers—This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All other employees—This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It includes sales (including driver salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office function, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment who are engaged in the construction of major additions or alterations to the plant and who are utilized as a separate work force.

In addition to reports sent to operating manufacturing establishments, information on employment during the payroll period which included March 12 and annual payrolls was also requested of auxiliary units (e.g., administrative offices, warehouses, and research and development laboratories) of multiestablishment companies. However, these figures are not included in the totals for individual industries shown in this report. They are included in the general summary and geographic area reports and in the final bound volumes as a separate category.

Payrolls—This item includes the gross earnings of all employees on the payroll of operating manufacturing establishments paid in the calendar year 1982. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers

of corporations, but excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payroll of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' Social Security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' supplemental labor costs, both those required by Federal and State laws and those incurred voluntarily or as part of collective bargaining agreements. (Supplemental labor costs are explained later in this appendix.)

As in the case of employment figures, the payrolls of separate auxiliary units of multiestablishment companies are not included in the totals for individual industries or industry groups.

Production-worker hours—This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

Cost of materials—This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (1) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year, (2) electric energy purchased, (3) fuels consumed for heat, power, or the generation of electricity, (4) work done by others on materials or parts furnished by manufacturing establishments (contract work), and (5) products bought and resold in the same condition. (See discussion of duplication of data below.)

Specific materials consumed—In addition to the total cost of materials, which every establishment was required to report, information was also collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information on the specific materials consumed is shown in table 7 if appropriate to the industry. Establishments consuming less than a specified amount (usually \$10,000) of a specific material were not requested to report consumption of that material separately. Also, the cost of materials for the small establishments for which either administrative records or short forms were used was imputed as "not specified by kind." (See the Introduction for the importance of administrative records in the industry.)

Value of shipments—This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and resold without further

processing. Included are all items made by or for the establishments from materials owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of "all other costs" (including company overhead) and profit. (See discussion of duplication of data below.)

Individual products—As in previous censuses, data were collected for almost all industries on the quantity and value of individual products shipped. In the 1982 census program, information was collected on the output of approximately 11,000 individual product items. The term "product," as used in the census of manufactures, represents the finest level of detail for which output information was requested. Consequently, it is not necessarily synonymous with the term "product" as used in the marketing sense. In some cases it may be much more detailed and, in other cases, it is more aggregative. For example, "pharmaceutical preparations" was distributed into over 100 items; whereas, "motor gasoline" was reported as a single item.

Approximately 6,000 of the product items were listed separately on the 1982 census report forms. Data for about 5,000 products were obtained in the monthly, quarterly, or annual surveys comprising the Current Industrial Reports series of the Census Bureau. Totals for the year 1982 for these items, as derived from the commodity surveys, are shown in the "products shipped" table (table 6a) together with the tieline total value collected in the census for reconciliation purposes.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1977 information is presented for most products.

Typically, both quantity and value of shipments information was collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers was also collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant was collected. Typically, the information on production was also collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

Classes of products—To summarize the product information, the separate products were aggregated into classes of products that, in turn, were grouped into all primary products of each industry. The code structure used is a seven-digit number for the

individual product, a five-digit number for the class of product, and a four-digit number for the total primary products in an industry. (See Introduction, Industry Classification of Establishments, for application of the coding structure to the assignment of SIC codes for establishments.)

In the 1982 census, the 11,000 products were grouped into approximately 1,500 separate classes on the basis of general similarity of manufacturing processes, types of materials used, and the like. However, the grouping of products was affected by the economic significance of the class and, in some cases, dissimilar products were grouped because the products were not sufficiently significant to warrant separate classes.

Duplication in cost of materials and value of shipments—The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication, since the products of some industries are used as materials by others. With some important exceptions, such as for motor vehicles and parts, this duplication is not significant at the four-digit industry level. However, it is significant at the two-digit and three-digit industry group level because these totals often include industries that represent successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the "Food" group and the addition of pulp mills to paper mills in the "Paper and Allied Products" group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the census of manufactures.

Value added by manufacture—This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning- and end-of-year inventories.

Because of the change in instructions for reporting inventories for 1982, the 1982 figure for value added is not strictly comparable to prior-year data. This is explained more fully in the inventories section below.

"Value added" avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

New and used capital expenditures—For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their new expenditures for (1) permanent additions and major alterations to manufacturing establishments, and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

The totals for new expenditures exclude that portion of expenditures leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under

contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Also excluded are expenditures for used plant and equipment (although reported in the census), expenditures for land, and cost of maintenance and repairs charged as current operating expenses.

Manufacturers were also requested to report the value of all used buildings and equipment purchased during the year at the purchase price. For any equipment or structure transferred to the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. Furthermore, if the establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported under used capital expenditures.

Total expenditures for used plant and equipment is a universe figure; i.e., it is collected on all census forms. However, the breakdown of this figure between expenditures for used buildings and other structures and expenditures for used machinery and equipment is collected only on the ASM form and is subject to sampling error (see table 3d). The data for total new capital expenditures, new building expenditures, and new machinery expenditures, as well as the data for total used expenditures, are shown in both tables 3a and 3d. The figure in table 3a is a census universe total and may differ from the results of the ASM sample shown in table 3d. Since the figures in table 3d are subject to sampling error, they are not considered as reliable as the universe figures.

End-of-year inventories—Respondents were asked to report their 1981 and 1982 end-of-year inventories at cost or market. Effective with the 1982 Economic Censuses, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). In 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Because of this change in reporting instructions, the 1982 data for inventories and value added by manufacture included in the tables of this report are not comparable to the prior-year data shown in table 1a of this report and in historical census of manufactures and annual survey of manufactures publications. Inventories and value added data estimated on a basis comparable to the historical data, using the reported information for 1982, are shown in footnote 4 of table 1a. However, the end-of-1981 figure shown in this footnote may differ from the corresponding value published as part of the 1981 Annual Survey of Manufactures.

This difference at the four-digit SIC level is due primarily to the effects of industry shifts. As described in the Industry Classification of Establishments section of the Introduction, ASM noncertainty plants are allowed to shift from one industry to another in a census year; whereas, they are "frozen" in a particular industry in ASM years. Other explanations for this difference include the effects of sampling and processing errors and revisions to end-of-1981 data reported by respondents.

In using inventory data by stage of fabrication for "all industries" and at the two-digit industry level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by another establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw

materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for individual industries, industry groups, and "all manufacturing," which are aggregates of figures reported by establishments in specified industries.

Specialization and coverage ratios—These items are not collected on the report forms but are derived from the data shown in table 5b. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

As noted in the Introduction, an establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary

products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in tables 1a through 5a and data on product shipments shown in tables 6a through 6c.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

SECTION 2. ITEMS COLLECTED ONLY ON ASM REPORT FORMS

Supplemental labor costs—Supplemental labor costs are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees. While the excluded items do benefit employees and all or part of their cost generally is similar to the items covered in the ASM labor costs statistics, accounting records do not generally provide reliable figures on net employee benefits of these types.

Cost of purchased services—ASM establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, and communication services. Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment, such as painting, roof repairs, replacing parts, and overhauling equipment. Such payments made to other establishments of the same company and for repair and maintenance of any leased property are also included. Extensive repairs or reconstruction that were capitalized are considered capital expenditures for used buildings and machinery and are, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force are also excluded.

The response coverage ratio shown in table 3d for each of the three types of purchased services listed above is a measure of the extent to which respondents reported for each item. It is derived for each item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight; see section 3) for those ASM establishments that reported the

specific inquiry to the weighted total employment for all ASM establishments classified in the industry.

Electric energy used for heat and power—Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy and quantity of generated-less-sold electric energy were collected only on the ASM forms. The cost and quantity of purchased electric energy represent the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

Beginning- and end-of-year depreciable assets—The data encompass all fixed depreciable assets on the books of establishments at the beginning and at the end of the year. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are non-depreciable capital assets, including inventories and intangible assets, such as patent rights and royalties. Also excluded are land and depletable assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year, rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress. In addition, respondents were requested to make certain that assets at the beginning of the year plus new and used capital expenditures, less retirements, equalled assets at the end of the year.

New and used capital expenditures—The data for total new capital expenditures, new building expenditures, new machinery expenditures, and total used capital expenditures are collected on all census forms. However, the breakdown between expenditures for used buildings and other structures and expenditures for used machinery and equipment is collected only on the ASM form. (See further explanation on capital expenditures in section 1.)

Breakdown of new capital expenditures for machinery and equipment—ASM establishments were requested to separate their capital expenditures for new machinery and equipment into (1) automobiles, trucks, etc., for highway use, (2) computers and peripheral data processing equipment, and (3) all other.

The category "automobiles, trucks, etc., for highway use" is intended to measure expenditures for vehicles designed for highway use that were acquired through a purchase or lease-purchase agreement. Vehicles normally operating off public highways (vehicles specifically designed to transport materials, property, or equipment on mining, construction, logging, and petroleum development projects) are excluded from this item.

The "not specified by kind" or n.s.k. item for expenditures for new machinery and buildings, shown in table 3d, represents the total machinery and equipment expenditures for establishments that did not break down their expenditures for the three specific categories. This means that for most industries the specific categories are understated.

Retirements—Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during 1982. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent was also requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

Rental payments—This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets, and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company, and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

Depreciation charges—This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for individual industries, industry groups, and "all manufacturing," which are aggregates of figures reported by establishments in specified industries.

Specialization and coverage ratios—These items are not collected on the report forms but are derived from the data shown in table 5b. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

As noted in the Introduction, an establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary

products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in tables 1a through 5a and data on product shipments shown in tables 6a through 6c.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

SECTION 2. ITEMS COLLECTED ONLY ON ASM REPORT FORMS

Supplemental labor costs—Supplemental labor costs are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees. While the excluded items do benefit employees and all or part of their cost generally is similar to the items covered in the ASM labor costs statistics, accounting records do not generally provide reliable figures on net employee benefits of these types.

Cost of purchased services—ASM establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, and communication services. Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment, such as painting, roof repairs, replacing parts, and overhauling equipment. Such payments made to other establishments of the same company and for repair and maintenance of any leased property are also included. Extensive repairs or reconstruction that were capitalized are considered capital expenditures for used buildings and machinery and are, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force are also excluded.

The response coverage ratio shown in table 3d for each of the three types of purchased services listed above is a measure of the extent to which respondents reported for each item. It is derived for each item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight; see section 3) for those ASM establishments that reported the

specific inquiry to the weighted total employment for all ASM establishments classified in the industry.

Electric energy used for heat and power—Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy and quantity of generated-less-sold electric energy were collected only on the ASM forms. The cost and quantity of purchased electric energy represent the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

Beginning- and end-of-year depreciable assets—The data encompass all fixed depreciable assets on the books of establishments at the beginning and at the end of the year. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are non-depreciable capital assets, including inventories and intangible assets, such as patent rights and royalties. Also excluded are land and depletable assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year, rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress. In addition, respondents were requested to make certain that assets at the beginning of the year plus new and used capital expenditures, less retirements, equalled assets at the end of the year.

New and used capital expenditures—The data for total new capital expenditures, new building expenditures, new machinery expenditures, and total used capital expenditures are collected on all census forms. However, the breakdown between expenditures for used buildings and other structures and expenditures for used machinery and equipment is collected only on the ASM form. (See further explanation on capital expenditures in section 1.)

Breakdown of new capital expenditures for machinery and equipment—ASM establishments were requested to separate their capital expenditures for new machinery and equipment into (1) automobiles, trucks, etc., for highway use, (2) computers and peripheral data processing equipment, and (3) all other.

The category "automobiles, trucks, etc., for highway use" is intended to measure expenditures for vehicles designed for highway use that were acquired through a purchase or lease-purchase agreement. Vehicles normally operating off public highways (vehicles specifically designed to transport materials, property, or equipment on mining, construction, logging, and petroleum development projects) are excluded from this item.

The "not specified by kind" or n.s.k. item for expenditures for new machinery and buildings, shown in table 3d, represents the total machinery and equipment expenditures for establishments that did not break down their expenditures for the three specific categories. This means that for most industries the specific categories are understated.

Retirements—Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during 1982. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent was also requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

Rental payments—This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets, and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company, and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

Depreciation charges—This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

APPENDIX B.

Annual Survey of Manufactures (ASM) Sampling and Estimating Methodologies

DESCRIPTION OF SURVEY SAMPLE

The Annual Survey of Manufactures (ASM) contains two components. The mail portion of the survey is a probability sample of about 55,000 manufacturing establishments selected from a total of about 225,000 establishments. These 225,000 establishments represent all manufacturing establishments of multiunit companies and all single-unit manufacturing establishments with five employees or more tabulated in the 1977 Census of Manufactures. This mail portion is supplemented by a Social Security Administration list of new manufacturing establishments opened after 1977. The individual establishments were defined as the sampling unit for this sample. This is a change from the previous ASM sample when companies were used as the sampling unit. The implication of this change is that the probability of selection of any establishment relates only to the size of the establishment itself and is independent of the size of the company with which the establishment is affiliated. The efficiencies associated with the change to an establishment sample have made it possible to reduce the mail sample panel from 70,000 establishments in 1978 to 55,000 establishments in the current panel.

The nonmail portion of the survey includes all single-unit establishments that were tabulated with less than five employees in the 1977 Census of Manufactures. Although this portion contained approximately 125,000 establishments, it accounted for less than 2 percent of the estimate for total value of shipments at the total manufacturing level. This portion was not sampled; rather, the data for every establishment in this group were estimated based on selected information obtained annually from the administrative records of other Federal agencies. This administrative record information, which includes payroll, total employment, industry classification, and physical location of the establishment, was obtained under special conditions, which safeguard the confidentiality of both tax and census records. Estimates for data for these small establishments were developed using industry averages in conjunction with the administrative information.

The corresponding estimates for the mail and nonmail establishments were added together, along with the adjusted base-year differences as defined in Description of Estimating Procedures below. The remaining description of the survey sample relates only to the mail portion of the ASM sample.

All establishments with 250 employees or more in the 1977 census were included in the survey panel with certainty. These establishments collectively account for approximately 65 percent of the total value of shipments for manufacturing establishments in the 1977 census. Smaller establishments were sampled with probabilities ranging from 1.000 down to 0.005 in accordance with mathematical theory for optimum allocation of a sample.

The probabilities of selection assigned to the smaller establishments were proportional to measures of size determined for each establishment. For establishments included in the 1977 Census of Manufactures, the measure of size depended directly upon each establishment's 1977 product class values and the

historic variability of the year-to-year shipments of each product class. Roughly equivalent measures of size were assigned to postcensus birth establishments based on their industry codes and anticipated payroll and employment.

The method of assigning measures of size was used in order to maximize the precision (that is, minimize the variance of estimates of the year-to-year change) in the value of product class shipments. Implicitly, it also gave weight to differences in employment, value added, and other general statistics, for these are highly correlated with value of shipments. Individual sample selection probabilities were obtained by multiplying each establishment's final measure of size by an overall sampling fraction coefficient calculated to yield a total expected sample size.

The sample selection procedure gave each establishment in the sampling frame an independent chance of selection. This method of independent selection permits the rotation of establishments into and out of a given sample panel without introducing a bias into the survey estimates.

DESCRIPTION OF ESTIMATING PROCEDURES

Most of the ASM estimates for the years 1978-1981 were computed using a modified "difference estimate" formula. For each item, a base-year difference was developed. This base-year difference is equal to the difference between the 1977 census published number for an item total and the linear ASM estimate of the total for 1977. The ASM linear estimate was obtained by multiplying each sample establishment's data by its sample weight (the reciprocal of its probability of selection) and summing the weighted values.

This base-year difference was then adjusted to reflect the estimated growth at the four-digit or, in the case of product classes, five-digit based Standard Industrial Classification (SIC) level from 1977 to the year of the survey; for example, 1981. It should be noted that due to processing constraints, the growth factors lagged one year; i.e., if 1981 is the survey year, they were not based on the estimated growth from 1977 to 1981 but rather the growth from 1977 to 1980. This one-year lag had negligible effect on the estimates, particularly at the total manufacturing level where the adjusted base-year difference accounted for less than 1 percent of the estimate for total value of shipments.

These adjusted base-year differences were then added to the corresponding current-year linear estimates, which include the sum of the estimates for the mail and nonmail establishments, to produce the estimates for the years 1978-1981. Estimates developed by this procedure usually are far more reliable than comparable linear estimates developed from the current sample data alone.

The 1982 sample data included in table 3d were also developed using difference estimates. However, since the universe totals for the census year (1977 or 1982) were not known, a modification of the procedure described above was necessary. For each item in table 3d, except purchased services and breakdown of expenditures for new machinery and equipment (see further description in appendix A, section 2), linear

estimates of the publication totals from the ASM mail sample were adjusted by the difference between imputed census totals and the corresponding ASM mail sample estimates of these imputed totals. These imputed totals are obtained by applying industry average ratios to control item values at the establishment level. For example, an imputed total beginning assets figure is obtained by multiplying each establishment's total value of shipments by the industry (four-digit SIC) average for the ratio of beginning assets to shipments.

Separate estimates for the nonmail establishments were not developed. However, their contribution to the publication estimates is reflected in the difference adjustment.

The method of inventory valuation percentages included in table 3c was developed using both complete census information and ASM estimates. The percentages for the four major categories (LIFO, non-LIFO, valuation method not reported, and LIFO reported without associated value and reserve) were derived from the complete census and correspond to the values included in table 3d. The percentages for the specific non-LIFO methods of valuations (FIFO, average cost, specific costs, etc.) are ratio estimates developed from the ASM in conjunction with the census universe estimate for the total of the non-LIFO methods.

QUALIFICATIONS OF THE DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sampled lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the differences between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of the estimates.

The particular sample selected for the ASM is one of a large number of similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretical, comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected statistics in this report. Except for table 3c, they are presented in the form of relative standard errors, the standard errors divided by the estimated values to which they refer. In table 3c, "absolute" standard errors of the estimates are presented.

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete coverage value would be included in the range:

1. From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

2. From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.
3. From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown as 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total and about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors would also occur if a complete canvass were to be conducted under the same conditions as the survey.

Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected in the course of the Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or only moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown.

The concept of complete coverage under the conditions prevailing for the ASM is not identical to the complete coverage of the census of manufactures, as the censuses have been conducted. Nearly all types of operational errors that affect the ASM also occur in the censuses. The ASM and the censuses, are conducted under quite different conditions, and operational errors can be better controlled in the ASM than in the censuses. As a result, for many of the census figures, the errors are of the same order of size as the total errors of the corresponding annual survey estimates. The differences between the census and ASM operating conditions also disturb, to some degree, the comparability of the ASM and census data.

Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be of limited reliability. However, the figure may be combined with higher-level totals, creating a broader aggregate, which then may be of acceptable reliability.

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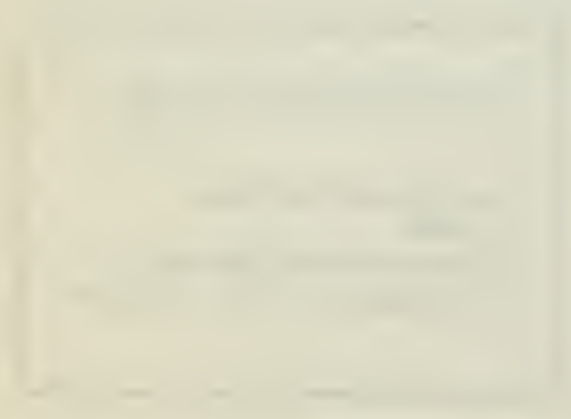
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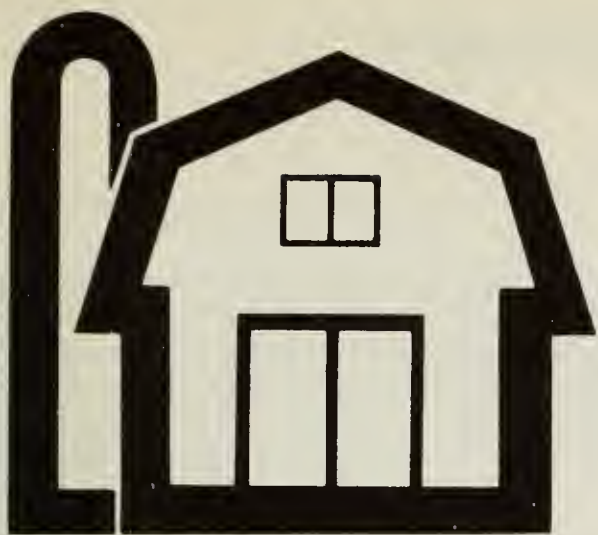
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PUBLICATION PROGRAM

1982 CENSUS OF MANUFACTURES

Publications of the 1982 Census of Manufactures, containing preliminary and final data on manufacturing establishments in the United States, are described below. Publication order forms for the specific reports may be obtained from any Department of Commerce district office or from Data User Services Division, Customer Services (Publications), Bureau of the Census, Washington, D.C. 20233

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 - Part 2. Major Groups 27 to 34
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- Volume III. Geographic Area Statistics—data previously issued in series MC82-A.
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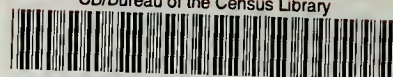
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